PROJECT BRIEF FOR THE DANUBE REGIONAL PROJECT (Phase 1)

Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin

March 2001

International Commission for the Protection of the Danube River

UNDP/GEF Assistance

Cover Note

Project Title: "Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin" (Phase 1)

Date: March 2001

	Work Programme Inclusion	Reference/Note:
1. Country Ownership		
• **Country Eligibility**		Cover page
• **Country Driveness**	**Clear description of project's fit within:** • National reports/communications to Conventions • National or sector development plans • Recommendations of appropriate regional intergovernmental meetings or agreements.	 • Chapter 1.1 • Chapter 1.6 • Chapter 1.7; 4
• **Endorsement**	• Endorsement by national operational focal point.	• Annex 13
2. Programme & Policy Conformity		
• **Programme Designation & Conformity**	• Describe how project objectives are consistent with Operational Programme objectives or operational criteria.	• Chapter 1.1 • Chapter 4; Annex 1 • Annex 9
• **Project Design**	**Describe:** • Sector issues, root causes, threats, barriers, etc, affecting global environment. • Project logical framework, including a consistent strategy, goals, objectives, outputs, inputs/activities, measurable performance indicators, risks and assumptions. • Detailed description of goals, objectives, outputs, and related assumptions, risks and performance indicators. • Brief description of proposed project activities, including an explanation how the activities would result in project outputs, • Global environmental benefits of project.	 • Chapter 1.1 – 1.5; 1.7 • Annex 2 • Chapter 2, Chapter 3, Annex 2 • Chapter 3; • Chapter 8; Annex 1

	Work Programme Inclusion	**Reference/Note:**
	• Incremental Cost Estimation based on the project logical framework. ▪ Describe project outputs (and related activities and costs) that result in global/regional environmental benefits ▪ Describe project outputs (and related activities and costs) that result in joint global and national environmental benefits. ▪ Describe project outputs (and related activities and costs) that result in national environmental benefits. ▪ Describe the process used to jointly estimate incremental cost with in-country project partner. ▪ Present the incremental cost estimate. If presented as a range, then a brief explanation of challenges and constraints and how these would be addressed by the time of CEO endorsement.	• Annex 1
• **Sustainability (including financial sustainability)**	Describe proposed approach to address factors influencing sustainability, within and/or outside the project to deal with these factors.	• Chapter 4
• **Replicability**	Describe the proposed approach to replication (for e.g., dissemination of lessons, training workshops, information exchange, national and regional forum, etc) (could be within project description).	• Chapter 2 • Chapter 3.2 (vi) • Chapter 3.3
• **Stakeholder Involvement**	• Describe how stakeholders have been involved in project development. • Describe the approach for stakeholder involvement in further project development and implementation.	• Chapter 4 • Chapter 10.1
• **Monitoring & Evaluation**	• Describe how the project design has incorporated lessons from similar projects in the past.	• Chapter 5
	• Describe approach for project M&E system, based on the project logical framework, including the following elements: ▪ Specification of indicators for objectives and outputs, including intermediate benchmarks, and means of measurement. ▪ Outline organizational arrangement for implementing M&E. ▪ Indicative total cost of M&E (maybe reflected in total project cost).	• Chapter 10; Annex 2 ▪ Annex 2 ▪ Chapter 10 ▪ included in total project costs

	Work Programme Inclusion	Reference/Note:
3. Financing		
• **Financing Plan**	• Estimate total GEF project cost : • Estimate contribution by financing partners : • Baseline Contributions : • Propose type of financing instrument	• Chapter 6.1; Annex 4 • Chapter 6.2 • Chapter 6.3-6.7 • The ICPDR shall coordinate donor support and assist to mobilize funds for implementation of investment programmes for pollution reduction under the DRPC.
• **Implementing Agency Fees**	• Propose IA fee	
• **Cost-effectiveness**	• Estimate cost effectiveness, if feasible. • Describe alternate project approaches considered and discarded.	• Chapter 8 • The present developed approach promises to be the most effective way to reach the project objectives, considering the implementation of the Pollution Reduction Programme, the ICPDR Joint Action Programme (Investment Programme) and the development of policies and legislation for nutrient reduction within the institutional and operational frame of the ICPDR.
4. Institutional Coordination & Support		
• **IA Coordination and Support** • **Core commitments & Linkages**	Describe how the proposed project is located within the IA's: • Country/regional/global/sector programmes. • GEF activities with potential influence on the proposed project (design and implementation).	• Chapter 10.1 • UNDP/GEF, UNEP and the World Bank (Strategic Partnership Programme) will participate in the ICPDR together with other interested bilateral donors and international organizations to assure efficient project implementation and evaluation of results.

	Work Programme Inclusion	Reference/Note:
• **Consultation, Coordination and Collaboration between IAs, and IAs and EAs, if appropriate.**	• Describe how the proposed project relates to activities of other IAs in the country/region.	• The "Strategic Partnership" developed by UNDP, UNEP, WB and GEF indicates the cooperating mechanisms between the World Bank (WB-GEF Partnership Investment Facility for Nutrient Reduction), the International Commission for the Protection of the Black Sea and the International Commission for the Protection of the Danube River.
	• Describe planned/agreed coordination, collaboration between IAs in project implementation.	• In the frame of the ICPDR all activities related to protection of international waters will be coordinated with particular attention to the EU approximation process and the development of policies and legislation in line with international and EU Directives.
5. Response to Reviews		
Council	Respond to Council Comments at pipeline entry.	None; N/A
Convention Secretariat	Respond to comments from Convention Secretariats .	N/A
GEF Secretariat	Respond to comments from GEFSEC on draft project brief.	None; GEFSEC fully supports
Other IAs and 4 RDBs	Respond to comments from other IAs, 4RDBss on draft project brief.	UNEP is co-implementing; World Bank sent comments supporting the project and emphasizing coordination with the Partnership Investment Facility for Nutrient Reduction.
STAP	Respond to comments by STAP at work programme inclusion	None; N/A
Review by expert from STAP Roster	Respond to review by expert from STAP roster.[1]	Review and Response: Annex 3

[1] STAP Roster Review, and IA response, is a required annex of the project brief.

PROJECT BRIEF

1. IDENTIFIERS

Project Number	
Project Name	**Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin (Phase 1)**
Duration	2 years (July 2001 – June 2003)
Implementing Agency	UNDP
Executing Agency	UNOPS / ICPDR
Requesting Countries	Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Bosnia & Herzegovina, Yugoslavia, Bulgaria, Romania, Moldova, Ukraine
Eligibility	Eligible under para. 9(b) of GEF Instrument
Participating Countries	Germany and Austria
GEF Focal Area	International Waters
GEF Programming Framework	GEF Operational Strategy for International Waters / Waterbody-Based Operational Programme (#8)

2. SUMMARY

The long-term development objective of the proposed Regional Project is to contribute to sustainable human development in the DRB through reinforcing the capacities of the participating countries in developing effective mechanisms for regional cooperation and coordination in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.

In this context, the proposed GEF Regional Project, being subdivided into two Phases, should support the ICPDR, its structures and the participating countries in order to ensure an integrated and coherent implementation of the Strategic Action Plan 1994 (SAP 1994), the ICPDR Joint Action Programme and the related investment programmes in line with the objectives of the DRPC.

The overall objective of the Danube Regional Project is to complement the activities of the ICPDR required to provide a regional approach and global significance to the development of national policies and legislation and the definition of priority actions for nutrient reduction and pollution control with particular attention to achieving sustainable transboundary ecological effects within the DRB and the Black Sea area.
The Danube Regional Project, in its Phases 1 and 2, shall facilitate implementation of the Danube River Protection Convention in providing a framework for coordination, dissemination and replication of successful demonstration that will be developed through investment projects (World Bank-GEF Partnership Investment Facility for Nutrient Reduction, EBRD, EU programmes for accession countries etc.).

The specific objective of Phase 1, July 2001 – June 2003, is to prepare and initiate basin-wide capacity-building activities, which will be consolidated in the second phase of the Project. This second Phase will be implemented from July 2003 – June 2006, building up on the results archived in the first Phase. During the first Phase, altogether 20 project components with 80 activities will be carried out and thus establishing a solid base for the implementation of Phase 2.

Taking into account the basic orientations of the Danube/Black Sea Basin Strategic Partnership, the following project components can be designed to respond to the overall development objective:

(1) Creation of sustainable ecological conditions for land use and water management;

(2) Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin;

(3) Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems;

(4) Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances.

3. COSTS AND FINANCING (USD)

GEF	- Project	4,629,630 USD
	[administrative cost]	370,370 USD
	- PDF	350,000 USD
	Subtotal GEF	**5,350,000 USD**
Co-Financing	Government / ICPDR	6,600,000 USD
	Subtotal Co-financing	**6,600,000 USD**
Total Project Cost		**11,950,000 USD**

4. ASSOCIATED FINANCING

- Government	186,000,000 USD
- UNDP	1,069,000 USD
- Bilateral, EU and NGO	166,375,000 USD
Total Baseline Costs:	**353,431,000 USD**

5. GEF OPERATIONAL FOCAL POINT ENDORSEMENTS (ANNEX 13)

Czech Republic	15 September, 2000
Slovakia	31 August, 2000
Hungary	30 August, 2000
Slovenia	29 August, 2000
Croatia	29 August, 2000
Bosnia & Herzegovina	1 September, 2000
Federal Republic of Yugoslavia	13 September, 2000
Bulgaria	1 September, 2000
Romania	30 August, 2000
Moldova	30 August, 2000
Ukraine	7 September, 2000
ICPDR President	13 September, 2000

6. IMPLEMENTING AGENCY CONTACT

Mr. Christopher Briggs
UNDP, GEF Coordinator
Regional Bureau for Europe and CIS
United Nations Plaza 1, New York 10017
Tel: + 1 212 906 5460
Fax: +1 212 906 6595 / 6267
chris.briggs@undp.org

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List of Abbreviations

AEPWS/EG	Accident Emergency Prevention and Warning System Expert Group
APR	Annual Project/Programme Report
AQC	Analytical Quality Control
BAT	Best Available Technology
BEP	Best Environmental Practices
BOD	Biological Oxygen Demand
COD	Chemical Oxygen Demand
DBAM	Danube Basin Alarm Model
DEF	Danube Environmental Forum
DEPA	Danish Environmental Protection Agency
DANUBIS	Danube Information System
DPRP	Danube Pollution Reduction Programme
DRB	Danube River Basin
DRBM/EG	Danube River Basin Management Expert Group
DRP	Danube Regional Project
DRPC	Danube River Protection Convention
DWQM	Danube Water Quality Model
€	Euro
Ad-hoc ECO/EG	Ad-hoc Ecology Expert Group
EMIS/EG	Emission Expert Group
EPDRB	Environmental Programme for the Danube River Basin
GEF	Global Environment Facility
GDP	Gross Domestic Product
GPA	Global Programme of Action
IAA	Implementing Agency Agreement
ICPDR	International Commission for the Protection of the Danube River
ICPBS	International Commission for the Protection of the Black Sea
IFI	International Financing Institution
IW	International Waters
JAP	Joint Action Programme
MLIM/EG	Monitoring Laboratory and Information Management Expert Group
MONERIS	Modeling Nutrient Emission in River System
M&E	Monitoring and Evaluation
MSP	Medium Sized Project
NGOs	Non Government Organizations
PIR	Project Implementation Review
PRP	Pollution Reduction Programme
REC	Regional Environmental Center
S/EG	Strategic Expert Group
SAP	Strategic Action Plan
SIA	Significant Impact Area
STAP	Scientific and Technical Advisory Panel
TAR	Transboundary Analysis Report
UNDP	United Nations Development Programme
UNIDO-TEST	United Nations Industrial Development Office - Transfer of Environmentally Sound Technology to Reduce Transboundary Pollution in the Danube River Basin
UNOPS	United Nations Office for Project Services
USAID	United State Agency for International Development
USD	United States Dollar
WPPCM	Water Pollution Prevention and Control Model

1 Background Information

1.1 Context of the Proposed Danube Regional Project

In the frame of the Environmental Programme for the Danube River Basin (EPDRB) international support was provided to facilitate the development and the implementation of the Danube River Protection Convention (DRPC). Since 1992 the European Community has supported, in particular through its Phare and Tacis programmes and the UNDP/GEF, in particular through its Pollution Reduction Programme (June 1997 to June 1999), the efforts of the Danube countries and of the Interim Commission for the Protection of the Danube River to develop the necessary mechanisms for effective implementation of the Convention. These mechanisms relate in particular to the development of a regional Strategic Action Plan (SAP) based on national contributions, the elaboration of a Transboundary Analysis to define causes and effects of transboundary pollution within the Danube River Basin and on the Black Sea. In the frame of the Danube Pollution Reduction Programme, based on the results of the Transboundary Analysis, an investment portfolio has been developed with particular attention to nutrient reduction. All the measures, projects and programmes proposed to reduce emissions from both point and non-point sources of pollution will improve water quality, considering a reduction of 50 % in Chemical Oxygen Demand (COD) emissions and 70 % in Biological Oxygen Demand (BOD) emissions and other toxic elements and thus reduce transboundary effects within the Danube River Basin. Once implemented, these measures will further substantially contribute to reducing nutrient transport (Phosphorus by 27 % and Nitrogen by 14 %) to the Black Sea to improve, over time, environmental status indicators of Black Sea ecosystems of the western shelf.

Since 1992/1993, donor investments in the frame of the Environmental Programme for the Danube River Basin (EPDRB) have been in the order of 27.2 million USD for the Phare and Tacis Programmes (ending October 2000) and of 12.4 million USD for the UNDP/GEF assistance.

The International Commission for the Protection of the Danube River Basin (ICPDR) has recently developed a first Joint Action Programme (JAP) for the years 2001 - 2005, which was adopted at the ICPDR Plenary Session in November 2000. The JAP will deal i.a. with pollution from point and non-point sources, wetland and floodplain restoration, priority substances, water quality standards, prevention of accidental pollution, floods and river basin management.

In order to ensure efficient implementation of the Common Platform for Development of National Policies and Actions for Pollution Reduction under the DRPC (Common Platform), the Pollution Reduction Programme and the JAP and to reinforce the appropriate development and application of policies, strategies and legislation for transboundary pollution reduction at the national level, a new phase of GEF assistance shall complement the activities of the ICPDR and the Black Sea PIU.

The new GEF assistance is planned within the frame of the Danube/Black Sea Basin Strategic Partnership (Annex 9) for the Danube and the Black Sea Basin. The Danube–Black Sea programme is composed of three complementary parts:

(i) a series of country-related investment projects executed through the World Bank-GEF Partnership Investment Facility for Nutrient Reduction with GEF financial support;

(ii) two Regional Projects for the Danube River Basin and the Black Sea respectively which are subdivided into two Phases (July 2001- June 2003 and July 2003- June 2006);

(iii) other GEF and donor interventions in the basin targeting reduction of nutrients and toxic pollutants.

The GEF regional Danube/Black Sea basin Strategic Partnership shall provide assistance to the ICPDR and the Black Sea PIU to reinforce their activities in terms of policy/legislative reforms and enforcement of environmental regulations (with particular attention to the reduction of nutrients and toxic substances). The regional projects, in their respective sphere of intervention and jointly, shall also assure a coherent and coordinated approach and global significance of policy and legislative measures introduced at the national level of the participating countries. Further, the GEF regional

components of the Danube/Black Sea Basin Strategic Partnership shall facilitate project implementation in providing a framework for dissemination and replication of successful demonstration that will be developed through the implementation of investment projects through the World Bank-GEF Partnership Investment Facility for Nutrient Reduction.

In this context, the proposed Danube Regional Project (DRP), with is split in two implementation Phases, has to be seen as an integral part of the Danube/Black Sea Basin Strategic Partnership and a logical continuation of the GEF support for capacity building provided for a period of five years to the countries of the DRB.

During the 1st Phase of the Project (July 2001 – June 2003) all but one of the project components and activities will be introduced and will have a logical follow-up in the 2nd Project Phase (July 2003 – June 2006) securing efficient achieving of final results. For the reason of continuity and utmost utilization of available expertise, the Danube Regional Project has to take into account and build on the existing mechanisms and structures, including:

- ⇒ the Common Platform (revised SAP), focusing on policies and strategies for water quality control and pollution reduction with particular attention to transboundary issues and reduction of nutrient transport to the Black Sea; regional policies and strategies have to be coordinated with the development of national policies and legislation and implemented through national investment programmes;
- ⇒ the Transboundary Analysis Report (TAR) identifies causes and effects of pollution with particular attention to transboundary issues and nutrient transport to the Black Sea; the TAR defines priorities for control and management strategies at the regional and national levels;
- ⇒ The Danube Pollution Reduction Programme (DPRP), is the actual investment programme of the ICPDR. It is the operational basis for the promotion and monitoring of pollution reduction measures in the DRB. A total of 421 projects for 5.66 billion USD, primarily addressing hot spots have been identified for municipal, industrial and agricultural projects which, once implemented, would decrease phosphorus and nitrogen loads to the Danube and downstream to the Black Sea by 27 and 14 % respectively;
- ⇒ the ICPDR, its Permanent Secretariat and its Expert Groups are responsible for the implementation of the DRPC with particular attention to emission control (EMIS/EG), monitoring of water quality (MLIM/EG), warning and prevention of accidental pollution (AEPWS/EG), river basin management and implementation of EU Water Framework Directive (RMB/EG), ecological status (Ad-hoc ECO/EG) and strategic/administrative issues (S/EG). The Danube Regional Project shall make use of these structures and instruments to pursue its objectives and organize its activities;
- ⇒ the Joint Action Programme 2001-2005, prepared by the EMIS EG has been approved by the ICPDR at the Plenary Session in November 2000. The projects and strategic measures contained in the Joint Action Programme are in most cases coherent with the projects in the Five Year Nutrient Reduction Action Plan, where the total amount of investment for point sources reduction is 4.4 billion € out of which 3.54 billion € are earmarked as national contributions.

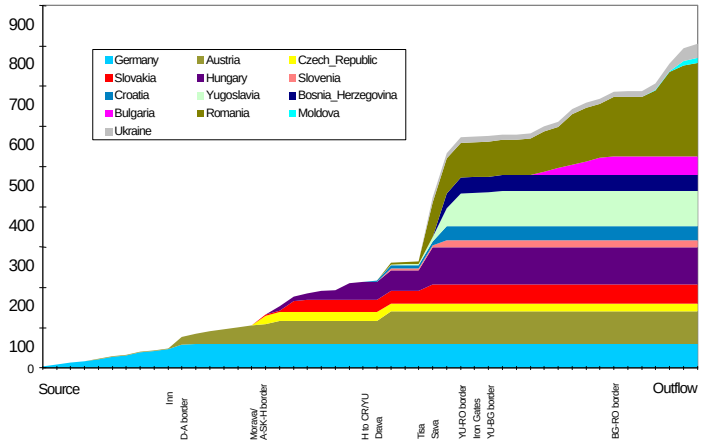
1.2 The Danube River Basin

The Danube River is with a length of 2 780 km the second largest river in Europe and drains an area of 817 000 square km. This includes: all of Hungary, nearly all parts of Austria, Romania, Slovenia, Slovakia and FR Yugoslavia, significant parts of Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Moldova and small parts of Germany and Ukraine.

The Danube River discharges into the Black Sea through a delta, which is the second largest natural wetland in Europe. The catchment profile along the Danube is presented in the attached figure.

The Basin, with a total of about 817 000 km² is characterized by an aquatic ecosystem with numerous important wetlands and floodplains. It is of high environmental as well as economic and social value. It supports drinking water supply, agriculture, industry, fishing, tourism and recreation, power generation, navigation, etc. A large number of dams, dikes, navigation locks and other hydraulic structures have been built throughout the region. (Annex 7 - Maps: Major Hydraulic Structures in the Danube River Basin).

The catchment profile along the Danube (in 1000 km2) subdivided over the 13 principal Danube countries



Utilizing water resources for important economic activities and the release of waste water without adequate treatment has resulted in changes in the hydrological systems. Problems of water quality and quantity have been created, including significant environmental damage, with resulting impairment of public health and quality of life.

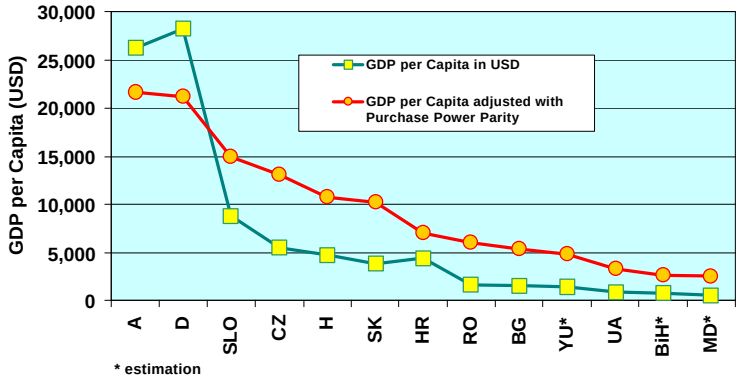
Central and eastern European countries in particular, during the period of centralized planning system, failed to develop adequate environmental protection policies and subsequent measures to fully respond to water pollution and degradation of river ecosystems. The economic situation of the countries in transition, most of which are considered as accession countries to the European Union, does not allow them to fully respond to the needs for environmental protection and the implementation of pollution control measures.

Appropriate water management concerns must be better integrated into municipal, industrial and agricultural policies and legislation to assure sustainable human development and promotion of economic activities. The Danube/Black Sea Basin Strategic Partnership shall in particular assist the countries in transition to respond to the regional and global environmental concerns with particular attention to nutrient reduction and elimination of other toxic substances in the water bodies.

1.3 Political, Demographic and Economic Issues

The present population of the Danube River Basin is about 83 million inhabitants (16 % of the population in Europe). Nearly 57 % of this population lives in increasingly growing urban areas. The share of the population connected to public water supply varies from 29% in Moldova to 98 % in Germany, yielding an average of 74%. The share of population branched to public sewer system varies from 14% in Moldova to 89% in Germany – an average of 52%. Based on the national projection figures, the population of the Danube River Basin can be expected to remain at its present level by the year 2020.

The Danube Countries:
GDP per Capita in USD (1998)
and GDP adjusted for Purchasing Power Parity



The analysis of economic disparities shows a clear trend of a west – east decline of the GDP from the upstream countries such as Germany and Austria, with about 25,000 USD per capita and year (in 1997), to the downstream countries among which Ukraine accounts for less than 1,000 USD per capita and year.

The middle and downstream Danube countries in transition are facing serious economic and financial problems in responding to the objectives of the Danube River Protection Convention and implementing measures for pollution reduction and for environmental protection as required for the accession to the European Union. This analysis also shows the need to assist the countries in transition and makes evident the responsibilities of the international community to respond to the regional and global concerns of environmental protection.

In general terms, the 13 DRB countries can be categorized and characterized as follows:

(i) Germany and Austria

These two countries are members of the European Union and are located at the upper part of the DRB. Compared to all other DRB countries, Germany and Austria have significantly higher economic development levels, represented by a per capita income of about 25 000 USD per annum. In terms of pollution reduction (COD, BOD, N and P) they have achieved high standards of emission reduction and water pollution control. From 1990 to 1999 both countries have invested important amounts for the installation of third stages and for the upgrading of municipal waste water treatment plants.

In 1997 and 1998 (2 years) Germany invested more then 2.4 billion USD for pollution reduction measures to respond to EU Water Directives and in particular to Nitrate Directive. Current investment in the water sector in the German part of the Danube River Basin is at the level of about 1.5 billion USD per year of which 1.2 billion USD is spent for communal waste water treatment facilities (including 3rd stage for nutrient removal). From 1993 to 1999 Austria invested about 9 billion ATS (780 million USD) per year for municipal waste water treatment including nutrient removal facilities.

Concerning the ongoing projects indicated in the Nutrient Reduction Plan, further investments of 234 million USD for Germany and 264 million USD for Austria are foreseen for the period from 2000 to 2005.

Austria and Germany together hold around 17% of territory and 21 % of the population of the Danube watershed. In terms of water flow of the Danube to the Black Sea Austria alone contributes to more than 20%. Based on the DWQM, Germany and Austria contribute to nutrient load reaching the Black Sea by 26.2% of Nitrogen and 15.3% of Phosphorus. Apart from the waste water purification programme, Austria is implementing a large programme for environmentally friendly agriculture named ÖPUL. Essentially it is aiming at extensive agricultural practices and reduction of nutrients load. Since 1995 this programme is running comprising around 90% of Austria´s agricultural area and backed yearly by financial means in the order of 9 Billion ATS (650 million €). In spite of these efforts in the agricultural sector neither country has yet met the European emission standards (EU Nitrate Directive). However, one must bear in mind that changes in agricultural practices and land management will – due to delay in runoff - take five or more years before producing obvious effects in terms of nutrient reduction.

(ii) Czech Republic, Slovakia, Hungary, Slovenia and Croatia

These countries are located in the central part of the DRB. They have to a great extent overcome the former central state planning systems and have reached medium economic development levels reflected in their annual GDP of between USD 4,000 and USD 9,000 per capita. The economic transition process has caused significant reduction of industrial and agricultural production, thus temporarily reducing production-related pollution loads. This has created an opportunity to establish and integrate environmental objectives into industrial and agricultural policies and legislation in line with EU guidelines. All these countries are interested in joining the EU as soon as possible; Hungary, the Czech Republic and Slovenia are obviously the priority candidates. In the process of fulfilling the basic accession criteria, these countries as well as Slovakia will receive special financial and technical support from the European Commission (ISPA funds) to help them develop an infrastructure and meet environmental standards. The present Regional Project shall in its two Phases assist these countries to develop adequate policies and legislation for emission control with particular attention to nutrient reduction.

(iii) FR Yugoslavia and Bosnia and Herzegovina

These two countries, also located in the central Danube River Basin, are still in the critical phase, struggling to overcome the aftermath of the war. In the forthcoming period, their main task will be to re-organize their political, legal, administrative and socio-economic structures in order to comply with the requirements of the commencing process of economic liberalization and privatization as well as of international normalization. With annual per-capita GDP of USD 1,100 (BiH) and USD 1,500 (Yugoslavia), both countries are presently well below their pre-war levels.

(iv) Romania, Bulgaria, Moldova and Ukraine

These countries are located in the lower Danube River Basin. Romania, Bulgaria and Ukraine are also Black Sea countries and contribute substantially to the degradation of the Black Sea ecosystems. These countries are both polluters and victims of pollution to the Black Sea. All four countries face serious economic problems and are in a difficult phase of political and social transition. Whereas environmental concerns are of high importance, the financial means for investments are very limited. Particularly critical is also the fact, that their legal and administrative framework is still to a certain extent determined by the former central planning structures and therefore not yet in compliance with the requirements of the commencing process of economic liberalization and privatization. This is particularly true for the two former Soviet Union countries Moldova and Ukraine and to a lesser extent for the two potential EU-Accession countries Bulgaria and Romania. The lower economic status of the four downstream Danube River countries is clearly documented by per capita GDP between USD 900 and 1,500 per annum.

It is obvious from this broad description of the DRB countries that there is a clear distinction in terms of political, administrative and economic capability from the wealthy countries in the upper DRB, the mid-income countries in the central DRB, down to the poorer countries in the lower part of the DRB.

1.4 Accidental Pollution in the Danube and the Tisza and Siret Sub-River Basins

Since the DRPC entered into force, first concerns about contamination of ground and surface waters were raised during the NATO intervention against Yugoslavia from March to June 1999. The bombing and destruction of petrochemical plants and refineries led to contamination of channels and tributaries emptying into the Danube River. Sampling and analysis have shown high levels of contamination with heavy metals, in particular mercury, oil and petroleum products, volatile organic substances, PCBs, PAHs, etc. However, one must bear in mind that the accumulation of toxic substances is not the effect of the recent bombing of industrial installations only but also the result of years of inefficient treatment and careless handling of wastes from industrial and mining activities.

In the beginning of the year 2000 two accidents occurred with disastrous environmental effects in the upper Tisza Sub-River Basin where mining activities are carried out. Waste water containing cyanide and heavy metals was accidentally discharged into receiving waters. Ecosystems where affected and large fish kills of several hundred tons were reported. Drinking water supply for urban centers at the riverbanks and fishing activities had to be suspended. Important economic losses were reported in tourism and fisheries. The effects of the cyanide wave were reported over a stretch of 900 to 1000 km from the Tisza River to the Danube and dangerous cyanide concentrations were still measured even downstream of the Iron Gate dam.

In January 2001 a new pollution accident was reported from the upper Siret Sub-River Basin where waste water containing cyanide was leaking from a chemical factory. This accident caused tons of killed fish and transboundary pollution and dozens of people, in particular children, got hospitalized from eating contaminated fish.

There are actually serious concerns over the possible accumulation of toxic substances in the sediments and biota of the Iron Gate reservoirs. Preventive management programmes have to be developed and implemented in order to gradually clean up the sediments and assure the rehabilitation of ecosystems in the central and lower part of the Danube River basin.

1.5 Institutional and Legal Mechanisms and Investment Programmes for Nutrient Reduction in the Danube Countries

In the frame of the present project preparation (PDF-Block B activities), specific subjects concerning the institutional, legal and policy frame as well as national investment programmes for nutrient reduction have been studied and analyzed.

(i) Inter –ministerial coordination mechanisms

In the frame of the PDF-Block B activities, inter-ministerial mechanism at the national level and concepts of cooperation for pollution reduction, in particular nutrient reduction, have been analyzed. The diversity of views and proposals for the implementation of EU Directives in the frame of the accession process create an encouraging environment for the countries to create new inter-ministerial mechanism or improve the existing structures with nutrient reduction and control responsibilities. Based on the finding of the national contributions, the Danube countries can be classified in three groups.

The first group is made up of EU member countries, Germany and Austria, in which the existing national inter-ministerial structures allow an effective performance of nutrient reduction and control tasks. In Germany, the inter-ministerial cooperation takes place on both federal and state levels, covering legislative procedures, implementation of EU-directives, and development of minimum requirements for point sources for municipalities as well as for industrial branches. In Austria, the recently restructured Ministry of Agriculture, Forestry, Environment and Water Management provides the necessary structure to adequately implement nutrient control and reduction measures.

The second group, made up of the Czech Republic, Hungary, Romania and Bulgaria includes countries where specific mechanisms or inter-ministerial structures for nutrient reduction do not yet exist. However, there are several relevant national inter-ministerial bodies with responsibilities for water pollution abatement and environmental protection. Most of these structures also deal with diffuse sources of pollution, the implementation of pollution reduction measures or approval of new investments in the water sector.

Finally, in the remaining Danube countries, the nutrient reduction and control issues do not yet represent a high priority for the policy makers.

All countries have developed proposals for the improvement/creation of inter-ministerial mechanisms capable of responding to nutrient reduction concerns. These proposals refer to both legal and institutional frameworks and include:

(i) the implementation of nutrient-related legislation based on EU Directives and ratified International Conventions,
(ii) the development of instruments for diffuse pollution characterization and control,
(iii) the elaboration of rules for good farming practices and good practices in drinking water protection zones,
(iv) the application of an integrated approach to the management of water resources on the river basin level.

The Danube countries believe that cooperation between governments, local communities and Non-Governmental Organizations (NGOs) in relation to the nutrient reduction is very important. Nutrient reduction issues are included directly or indirectly in the mandate and the responsibilities of the local authorities, farm enterprises, industrial plants and environmental NGOs. In the frame of river basin organizations the majority of the countries sets good examples of cooperation between the government, inter-ministerial bodies, local communities and NGOs.

The activities of the PDF-Block B investigation have raised awareness and provided important legitimacy to the concept of inter-ministerial mechanism for nutrient reduction and helped move it into the mainstream of policy debate for its implementation. The forthcoming Danube Regional Project with its two Phases will reinforce national initiatives and contribute towards the setting up of adequate nutrient reduction mechanisms at the national and regional levels.

(ii) Policies and legislation relating to nutrient control and reduction

After a critical period of transition, all DRB countries have in the meantime developed a comprehensive hierarchic system of short, medium and long-term environmental policy objectives, strategies and principles which usually reflect the key country-specific environmental problems and the sector priorities on national and regional levels.

Despite the diversity of problems, interests and priorities across the DRB, the Danube countries share certain values and principles relating to the environment, conservation of natural resources and nutrient control and reduction. The most essential and commonly accepted principles are:

- the precautionary principle;
- best available technology (BAT) - best environmental practice (BEP);
- control of pollution at the source;
- the "polluter pays" principle and the related "user pays" principle;
- the principle of integrated approach (e.g. River Basin Management approach);
- the principle of shared responsibilities, respectively the principle of subsidiarity;
- the implementation of EU Directive 76/464/EEC on pollution caused by certain dangerous substances.

None of the DRB countries currently has an explicitly formulated nutrient reduction programme. Measures and activities with relevance to nutrient reduction are usually sub-components of or are substantially incorporated in other programmes.

While Germany and Austria have legislation in compliance with "highest environmental standards" on nutrients (e.g. EU Nitrate Directive), they have not yet fully implemented / enforced these legislation. The adequacy of the legal framework for sound environmental management of water resources of the other countries has to be viewed against the political, economic, administrative and social changes that have taken place in the particular DRB countries during the previous years of transition.

Thus, the relevant legislation is in most DRB countries currently undergoing substantial reform and modernization. Given the complexity of the task, the reform can be expected to take several years before the relevant legislation has reached an acceptable level of compliance with the international requirements.

Except for the two EC member states, Germany and Austria, all other DRB countries consider the harmonization of national environment and water-related legislation with EU legislation as the most essential prerequisite for long-term sustainable nutrient control and reduction in their countries. In the Czech Republic, Hungary and Bulgaria, this harmonization is incorporated in an ongoing programme and considered as a short-term task.

In Romania, Slovakia and Slovenia, the harmonization of relevant national laws with EU legislation or standards is expected to be achieved in the short, respectively medium term. For the final implementation of the Urban Waste Water Treatment Directive, an adjustment period of approximately 10 to 20 years is considered to be necessary.

In other countries - Moldova, Ukraine and the war-impacted countries Croatia, Bosnia-Herzegovina and Yugoslavia - the status of the water sector legislation is still unsatisfactory.

From the point of view of nutrients, the most essential issue is the substantial transposition of:

- the new Council Directive 2000/60 of 22 December 2000 concerning water policy which aims at a good status for all surface and groundwater within (often transboundary) river basin districts (RBD). By December 2015, river basin management plans must be prepared for each RBD; already by December 2012, all polluting discharges must be controlled under a combined approach of best available techniques and emission limit values, as well as by best environmental practice for diffuse pollution;
- the Council Directive 91/271/EEC of May 1991 concerning urban waste-water treatment;
- the Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources.

Regarding the particular issue of control, respectively the out-phasing of phosphate-containing detergents, the current situation in the particular DRB countries indicates that there is a substantial potential for phosphorus reduction in most DRB countries, which should be followed up on.

(iii) Nutrient reduction programmes 2000 – 2005 and related investments

Within the frame of further development of Five Nutrient Reduction Action Plan, both structural/investment and legal/policy reforms projects that address nutrient reduction will be introduced.

(a) Point Source Projects and anticipated nutrient reduction

Within the elaboration of the PDF-B project all 13 DRB countries have provided a draft national lists of priority projects that are supposed to be ready for implementation in the coming 5-year period and can be considered as a reasonable basis for the elaboration of comprehensive Nutrient Reduction Action Plans as part of the ICPDR Joint Action Programme.

According to the available data, the total investment required for the 245 priority point source projects for all 13 DRB countries amounts to about 4,404 million €.

The structure of the identified investment requirements by sector is as follows (2001 – 2005):

	Municipal	**Industrial**	**Agricultural**	**Wetlands**	**Total**
No of Projects	157	44	21	23	245
Million €	3,702	267	113	323	4,404
(%)-Structure	84%	6%	3%	7%	100

The structure of the identified investment requirements by countries is as follows:

	GER	**A**	**CZ**	**SK**	**HUN**	**SLO**	**CRO**	**B&H**	**YUG**	**BUL**	**RO**	**MOL**	**UA**	**TOT**
No of Proj.	11	4	12	20	24	24	11	12	40	21	25	31	10	245
Mill. €	231	264	147	118	687	384	433	176	785	125	493	493	67	4,404
(%)	5	6	3	3	16	9	10	4	18	3	11	11	1	100

The anticipated composition of the funding of the identified priority projects across the DRB countries is as follows:

Funding component	**Million e**	**(%) – Structure**
National funding contribution	1,716	39 (%)
International loans:	1,163	26 (%)
International grants:	663	15 (%)
Not secured funding components:	862	20 (%)
Total:	4,404	100 (%)

According to the available data provided by the national reports, total pollution reduction as a result of the implementation of the proposed priority point source projects including waste water from urban areas, which are not connected to WWTP, is anticipated to be in the following ranges:

	Municipal	**Industrial**	**Agricultural**	**Wetlands**	**Total**
No of Projects	157	44	21	23	245
N (t/y)	33 300	3 400	6 700	15 100	58 500
P (t/y)	5 500	3 700	1 100	1 800	12 100
BOD (t/y)	221 000	39 700	9 500	5 900	276 100
COD (t/y)	398 900	78 700	15 000	32 400	525 000

(b) Nutrient reduction from agricultural non point sources of pollution

Based on the available data, the assessment of the anticipated nutrients reduction from agricultural non point sources of pollution shows values ranging between 10 and 25 % for nitrogen and between 3 and 25 % for phosphorus.

To ensure significant nutrient loads reduction from diffuse sources of pollution, the Danube countries have identified measures that primarily address:

(i) policy and legislation-related actions: the improvement of national policies and legislation regarding the utilization of fertilizers and livestock waste and approximation of national legislation to relevant EU legislation and standards;

(ii) institutional strengthening and capacity building: the elaboration and enforcement of guidance on the application of the agro-environmental schemes and best environmental practice;

(iii) raising public awareness and strengthening public participation in nutrient reduction initiatives: the development of pilot projects for the implementation of alternative methods.

The estimates of the nitrogen and phosphorus reduction for point sources and non point sources as presented in the national contributions are summarized below:

Country	Nutrient loads (DWQM 1994/98)		Anticipated national emission reductions				Expected national load reduction	
			Point Sources		Non Point Sources*			
	N (t/y)	P (t/y)	N (%)	P (%)	N (%)	P (%)	N (t/y)	P (t/y)
Germany	68,000	3,700	6.0	2.0	10.0	3.0	10,891	185
Austria	77,000	3,800	5.1	10.6	10.0	3.0	11,650	518
Czech Republic	15,000	1,100	7.3	5.6	10.0	3.0	2,591	95
Slovakia	30,000	1,700	8.6	8.6	15.0	10.0	7,074	318
Hungary	31,000	3,800	21.6	40.1	15.0	10.0	11,358	1,902
Slovenia	20,000	1,300	26.2	62.6	15.0	10.0	8,233	944
Croatia	23,000	2,200	6.6	10.9	15.0	10.0	4,959	459
Bosnia-Herzegovina	36,000	2,200	13.1	38.8	10.0	10.0	8,300	1,073
Yugoslavia	72,000	7,000	9.4	69.5	10.0	10.0	13,993	5,563
Bulgaria	23,000	4,000	11.7	15.0	10.0	10.0	4,983	999
Romania	121,000	12,700	9.8	12.5	10.0	10.0	23,960	2,861
Moldova	8,000	1,400	86.3	64.6	5.0	5.0	7,298	975
Ukraine	28,000	4,000	1.7	1.6	10.0	5.0	3,286	265
Total	552,000	48,900	10.3	23.8	10.9	8.2	118,576	16,156

* Percentage for expected reduction of nutrient emissions from non-point sources for groups of countries has been estimated, based on available information and data for expected emission reduction following the implementation of new policies and legislation in line with EU Directives.

The results in the table indicate that with the implementation of structural (projects) and non-structural measures (policies and legislation), the total annual nutrient reduction will be about 119,000 tons for nitrogen (22%) and 16,000 tons for phosphorus (33%). It can be further assumed that about half of the nitrogen reduction will come from the rehabilitation of point sources (waste water treatment) and the other part from nutrient reduction from diffuse sources, in particular from change of agricultural practices.

The GEF Regional Project with its two Phases will provide the necessary support to the ICPDR and the participating countries to realize these goals and to contribute essentially to achieving the goal of holding the Nitrogen and Phosphorus loads to the Black Sea at the 1997 level respectively further reducing them to meet the objectives of the Memorandum of Understanding between the ICPDR and ICPBS.

1.6 Mechanisms for Regional Cooperation for the Protection of Water and Ecological Resources in the Danube River Basin

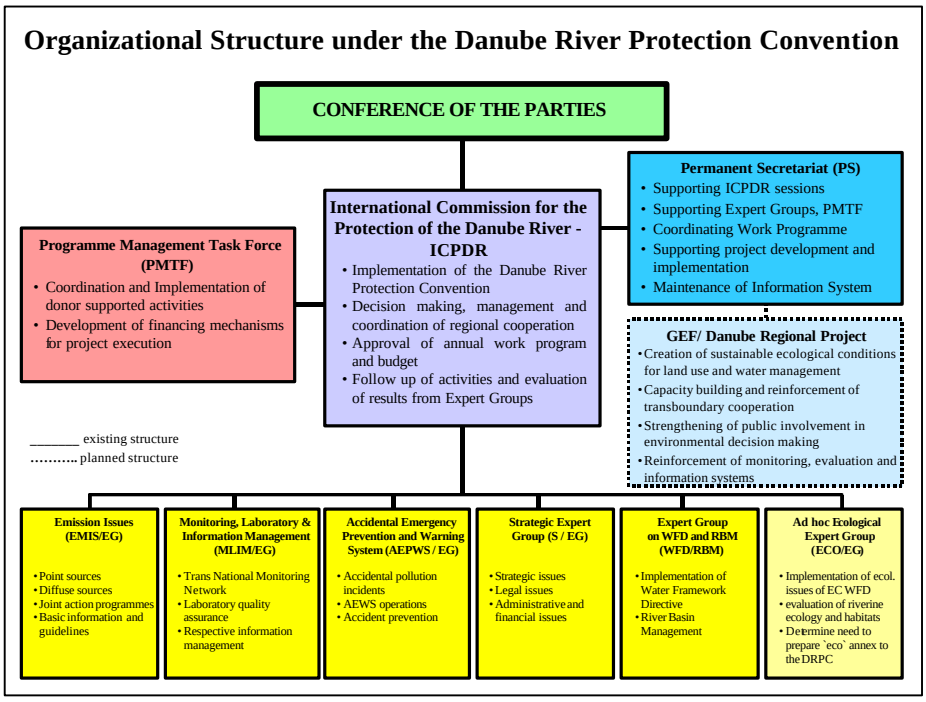
(i) The Danube River Protection Convention

The Danube River Protection Convention is a legally binding instrument, which provides a substantial framework and a legal basis for cooperation between the contracting parties, including enforcement. The main objective is the protection and sustainable use of ground and surface waters and ecological resources, directed at basin-wide and sub-basin-wide cooperation with transboundary relevance. Joint activities and actions are focused on coordination and enhancement of policies and strategies, while the implementation of measures lies mainly with the executive tools at the national level. The Strategic Action Plan provides guidance concerning policies and strategies in developing and supporting the implementation measures for pollution reduction and sustainable management of water resources enhancing the enforcement of the Danube River Protection Convention.

Eleven of the 13 DRB countries eligible to join the Convention have signed with the European Commission the Danube River Protection Convention (DRPC), which came into force in October 1998, and most have ratified it.

(ii) The International Commission for the Protection of the Danube River (ICPDR)

Recognizing individually and responding in common to the obligations of the DRPC, the Danube countries have established the International Commission for the Protection of the Danube River to strengthen regional cooperation. It is the institutional frame not only for pollution control and the protection of water bodies but it also sets a common platform for sustainable use of ecological resources and coherent and integrated river basin management. The Commission has created several Expert Groups to strengthen the proactive participation of all Contracting Parties and associated countries in the design and implementation of joint measures for pollution reduction, including nutrients, and water management.



1.7 Cooperation between the ICPDR and the International Commission for the Protection of the Black Sea (ICPBS)

(i) Findings of the Joint Ad-hoc Technical Working Group of the ICPDR and the ICPBS

In 1998, the ICPDR and the ICPBS established a joint Working Group, which analyzed the causes and the effects of eutrophication in the Black Sea. In its findings, the Working Group indicated that the loads entering the Black Sea from the Danube had fallen in recent years due to the collapse of the economy of many transition countries formerly attached to the Soviet Block, the measures undertaken to reduce nutrient discharges in the upper Danube countries, in particular Germany and Austria, and a decline in the use of phosphate in detergent.

The Working Group concluded that in spite of the evidence of recovery in the Black Sea ecosystems, there were still concerns that the nutrient discharges to the Black Sea – in line with the expected economic growth – were likely to rise again unless action was taken to implement nutrient discharge control measures as part of economic development strategies. The Working Group went on to define the possible objectives and strategies, which are presently included in the Memorandum of Understanding between the ICPDR and the ICPBS, as follows:

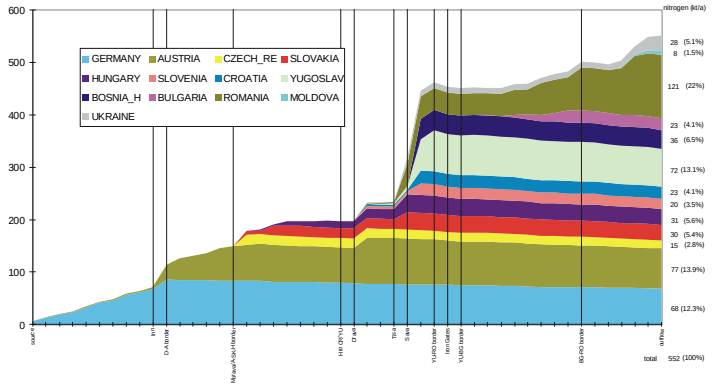
- ⇒ the long-term goal is defined as a recovery of the Black Sea ecosystems to conditions similar to those in 1960;
- ⇒ as a mid-term goal, measures should be taken to prevent discharges of nutrients and hazardous substances from exceeding the levels of 1997;
- ⇒ inputs of nutrients and hazardous substances should be assessed, monitoring and sampling procedures should be determined, and the results should be reported.

(ii) Analysis of Point Sources and Non-Point Sources of Pollution with Particular Attention to Nutrient Transport to the Black Sea

In the frame of the Pollution Reduction Programme, over 500 hot spots were identified for the municipal, industrial and agricultural sectors. The geographical distribution of hot spots in the Danube River Basin indicates a clear concentration of municipal and agricultural hot spots in the upper Drava and Sava Sub-river Basins, in the Lower Tisza and around Belgrade and in the central part of Bosnia-Herzegovina. In the Carpathian Mountains of the upper Tisza and Prut Sub-river Basins, important mining and industrial hot spots have been identified, from which recent accidents - the cyanide spill of Baia Mare and the sludge containing heavy metals from Baia Borsa - have been reported. (Annex 7 – Maps: Distribution of Hot Spots in the Danube Sub-River Basins).

Applying the Danube Water Quality Model (DWQM), the total nutrient transport from point and non-point sources, to the Black Sea was analyzed, indicating a total of 552 kilotons of nitrogen and 48.9 kilotons of phosphorus reaching annually the Black Sea. Studies undertaken in the frame of the Danube Environmental Programme suggest that about half of the nutrient discharged internally in the basin come from agriculture (diffuse sources of pollution), slightly more than one quarter from domestic sources, an additional larger share comes from industry and the remainder from "background" sources.

Annual Nitrogen Load in the Danube (in kt/y), by countries of origin, with a high estimate for the in stream denitrification (= removal rate)



2 Project Objectives

The long-term development objective of the proposed Regional Project is to contribute to sustainable human development in the DRB through reinforcing the capacities of the participating countries in developing effective mechanisms for regional cooperation and coordination in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.

In this context, the proposed GEF Regional Project should support the ICPDR, its structures and the participating countries in order to ensure an integrated and coherent implementation of the Strategic Action Plan 1994 (SAP 1994), the Common Platform and the forthcoming JAP and the related investment programmes in line with the objectives of the DRPC.

The overall objective of the Danube Regional Project is to complement the activities of the ICPDR required to provide a regional approach and global significance to the development of national policies and legislation and the definition of priority actions for nutrient reduction and pollution control with particular attention to achieving sustainable transboundary ecological effects within the DRB and the Black Sea area.

The specific objective of Phase 1, July 2001 – June 2003, is to prepare and initiate basin-wide capacity-building activities, which will be consolidated in the second phase of the Project. This second Phase will be implemented from July 2003 – June 2006, building up on the results archived in the first Phase. During the first Phase, altogether 20 project components with 80 activities will be carried out and thus establishing a solid base for the implementation of Phase 2 of the GEF support to the ICPDR.

Further, the Danube Regional Project, in its Phases 1 and 2, shall facilitate implementation of the Danube River Protection Convention in providing a framework for coordination, dissemination and replication of successful demonstration that will be developed through investment projects (World Bank-GEF Partnership Investment Facility for Nutrient Reduction, EBRD, EU programmes for accession countries etc.).

Taking into account the basic orientations of the Danube/Black Sea Basin Strategic Partnership, the following immediate objectives can be designed to respond to the overall development objective:

(1) OBJECTIVE : Creation of sustainable ecological conditions for land use and water management

Output : Concepts for nutrient reduction policies and legal instruments and measures for compliance are developed for all Danube River Basin countries with particular attention to the EU Water Framework Directive, integrated river basin management, best agricultural practices, appropriate land use and wetlands management and economic instruments.

Approach : Supporting the ICPDR and the DRB countries in developing of appropriate policies and legal instruments for river basin management, appropriate land use, improved water management and water quality control with particular attention to toxic substances and nutrient reduction (e.g. agricultural, industrial, and municipal policy and legislative reforms, wetlands management) and in developing mechanisms for exacting compliance with policies and legislation.

Assuring policy coherence to the guidelines of the Global Programme of Action on Control of Land Based Sources of Pollution, with particular emphasis on the strategic goals regarding mitigation of transboundary effects and rehabilitation of the Black Sea.

(2) OBJECTIVE : Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the DRB

***Output* :** Institutional and organizational mechanisms for transboundary cooperation in pollution control and nutrient reduction are put in place and concepts for improved water quality monitoring, emission control, emergency warning and accidental prevention are developed.

***Approach* :** Conceptualizing and putting in place "Inter-ministerial Committees" at the national level, involving all technical, administrative and financial departments to assure adequate coordination and implementation of policies, legislation and projects for nutrient reduction and pollution control. Supporting the ICPDR and its Expert Groups to improve their institutional, administrative and technical capacities to assure basin wide harmonization of water quality regulatory standards including specific provisions for nutrient reduction; to further develop specific regional information system and mechanisms for transboundary pollution monitoring and evaluation considering EU regulations (WFD) and GEF IW M&E indicators (process, stress reduction, environmental status).

Organizing workshops and training courses on institutional, administrative, technological and economic issues for individuals and participants from ministries, public authorities and private institutions with responsibilities related to the use, control and impacts of nutrients in the DRB, respectively their effects on the Black Sea.

(3) OBJECTIVE : Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems

***Output* :** The DEF Secretariat is fully operational and supports national NGOs. Community based projects for nutrient reduction (Small Grants Programme) and awareness campaigns are prepared and information material is regularly published. Consequently public concern and response to ecological issues has increased.

Approach : Supporting NGOs in professional, institutional, administrative and funding issues to boost their capacities for active participation in transboundary pollution control with particular attention to nutrients and certain toxic substances. In this context, NGO activities and public awareness shall be reinforced through the setting up of a Small Grants Programme providing financial support for community based nutrient reduction projects. Concepts for special campaigns for awareness raising and information of the public shall be developed and cooperation with mass media shall be reinforced.

(4) OBJECTIVE : Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances

***Output* :** A Danube Basin wide system for monitoring and evaluation of environmental impacts is prepared and indicators are identified for process, stress reduction and environmental status in line with EU and international reporting requirements. Economic instruments for nutrient reduction (nutrient trading possibilities) are analyzed and findings are published.

***Approach* :** Supporting the development and upgrading of monitoring and information systems, which are of significant importance for transboundary cooperation in water quality and water management and of common interest for the Danube and the Black Sea countries. Particular attention will be given to the development of indicators (process, stress reduction and environmental status indicators) to monitor progress of project implementation. For this purpose special methodologies will be developed for assessment nutrient removal capacities of wetlands. Also economic mechanisms will be analyzed to encourage investments in nutrient reduction measures.

3 Project description

The compilation of immediate objectives indicates the broad spectrum of 20 project components and 80 activities to be dealt with in the framework of the proposed Phase 1 of the Danube Regional Project in order to fulfill its role as an integral part of the proposed Danube/Black Sea Basin Strategic Partnership.

In line with the immediate objectives, the particular 20 project components of the proposed Phase 1 of the Danube Regional Project can be grouped as follows:

1. Creation of sustainable ecological conditions for land use and water management;
2. Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin;
3. Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems;
4. Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances.

3.1 Creation of sustainable ecological conditions for land use and water management

In most central and downstream DRB countries, the development of water-related policies and legal instruments are still in the phase of preparation and it is obvious that there are significant deficiencies in the existing policy framework. Most of these countries are in the EU accession process and have to adjust their legal frame to meet the EU directives and regulations and assure compliance. For issues that are of common interest for the DRB countries and of special importance for water quality and water resource management, particularly related to nutrients, eight project components have been identified to be carried out in the frame of the present Regional Project.

(i) Development of policy guidelines for river basin and water resources management

Considering the DRPC´s mandate to assure sustainable water management in the DRB and taking into account the central role of the river basin management in implementing the new EU Water Framework Directive, there is a substantial need to facilitate the development of river basin management plans in the Danube River Basin and in its sub-basin areas. These river basin management plans will have to deal with nutrient reduction from point- and non-point sources.

To assure efficient implementation of the EU Water Framework Directive and a coherent approach to River Basin Management, the ICPDR has set up a specialized Expert Group to develop guidelines for the elaboration of the River Basin Management Plans, their implementation and the development of institutional and legal mechanisms. Two workshops have been organized in the frame of the EC Phare assistance programme and case study material had been prepared. These elements will be integrated in the proposed activities of the GEF-DRP. During the Phase 1 of the Danube Project concepts and analytical material will be prepared, which later during Phase 2 of the Project will be implemented in form of national contributions, pilot projects and workshops on river basin management and implementation of the EU WFD.

The activities of the EG shall be supported by international expertise in order to develop standardized methodologies and guidelines for sub-river basin management plans and a methodology for the aggregation of the sub-river basin management plans to a basin wide management concept. This should take into consideration EU-WFD and GEF IW strategies to develop guidelines for particular sub-river basins to reinforce transboundary cooperation.

The main activities to be supported and carried out in Phase 1 in cooperation with the RBM Expert Group can be summarized as follows:

- Identifying River Basin District (RBD), in particular the assignment of coastal waters and groundwater bodies;
- Developing common approaches and methodologies for pressure and impact analysis;
- Implementing the common approaches and methodologies for pressure and impact analysis at the national level *(to be followed up in Phase 2)*;
- Applying the EU Guidelines for economic analysis and arrive at the overall economic analysis for the Danube River Basin *(to be followed up in Phase 2)*;
- Developing RBM tools (mapping, GIS, remote sensing, etc.) and related data management, including the arriving at the typology of surface waters and the relevant reference conditions *(to be followed up in Phase 2)*;
- Identifying pilot river basins and apply common approaches, methodologies, standards and guidelines, in observing also the link to the Working Groups of the European Commission *(to be followed up in Phase 2)*;
- Develop concepts and programmes for workshops and training courses in order to produce the River Basin Management Plan and to strengthen basin-wide cooperation *(to be followed up in Phase 2)*.

(ii) Reduction of nutrients and other harmful substances from agricultural point and non-point sources through agricultural policy changes

As indicated in chapter 1.7 it is assumed that about half of nutrients discharged internally in the Danube Basin to the fine web of the river network come from agriculture. The project will support a series of measures to operationalize actions for pollution reduction from point and non-point source. In the Phase 1 of the Project, a first analysis should be based on a revised and prioritized "hot spot" inventory of point and non-point sources of pollution and take into account the findings and recommendations of the field-based demonstration programmes conducted in Eastern European countries with the support of the European Union and GEF. The project will update the information on the use of agrochemicals and identify specific policy and legal measures to assist the participating countries in meeting their obligations to reduce agricultural point and non-point source pollution. For EU accession countries, specific programmes will be developed that will assist them in meeting their obligations under the EU Environment and Water Framework Directives, as well as the requirements of the important Nitrate Directive (91/676/EEC). In Phase 2 of the Project policy and legal recommendations will be worked out for DRB governments to reinforce the introduction of "best agricultural practice" and to optimize the use of agrochemicals

The main focus of this assistance is to identify for each DRB country the main administrative, institutional and funding deficiencies and to develop priority reform measures for policies which are expected to best support the integration of environmental concerns into farm management ("best agricultural practices"), including improvements in the handling of manure and sludge from livestock operations, minimization of chemical fertilizers and pesticides, promotion of improved tillage methods, management of restored wetlands and buffer zones as well as farmer education and outreach activities.

For this purpose, the following actions should be considered in Phase 1:

- Up-dating the basin-wide inventory on priority agricultural point and non-point sources of pollution "hot spots" in line with EMIS emission inventory;
- Reviewing the relevant legislation, existing policy programmes and actual state of enforcement in the DRB with respect to promotion and application of best agricultural practices *(to be followed up in Phase 2)*;
- Reviewing the inventory on important agrochemicals (nutrients etc.) in terms of quantities of utilization, their misuse in application, their environmental impacts and potential for reduction *(to be followed up in Phase 2)*;

- Identifying the main institutional, administrative and funding deficiencies (including complementary measures) to reduce pollutants;
- Introducing or, where existing, further developing concepts for the application of best agricultural practices in all DRB countries, by taking into account country-specific traditional, social and economic issues, and the ECE recommendations *(to be followed up in Phase 2)*.

(iii) Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point and non-point sources

This pilot project component has to be considered as complementary to the above-described policy component, which also includes the updating of the list of point and non-point sources of pollution with particular attention to priority agricultural "hot spots". It is particularly focusing on adequate handling of manure and on the practical introduction of organic farming methods. Agricultural point sources (e.g. large pig farms), including inappropriate handling of manure, are estimated to supply 2.5% and 6.8 %, respectively, of the nitrogen and phosphorus reaching the Danube River Basin.

The initial project review of existing national programmes promoting best agricultural practice should be based on and take into account the findings and recommendations of the field-based demonstration programmes conducted in Eastern European countries with the support of the European Union and GEF.

Specific needs to improve agricultural practices and relevant sites for demonstration activities on manure handling and should be identified in practical concepts for each DRB country. Focus countries for pilot projects (training and institutional development of best agricultural practice) should be Ukraine, Moldova, Romania, Bulgaria, Yugoslavia and Bosnia & Herzegovina. The implementation of the prioritized pilot projects will be carried out in Phase 2.

The following steps should lead to an efficient implementation of this project component in Phase 1:

- Analyzing existing programmes and pilot projects promoting best agricultural practice (especially regarding animal farming and manure handling, as well as organic farming) in DRB countries, and assess nutrient reduction capacities;
- Developing practical concepts for the introduction respectively promotion of appropriate agricultural practices and manure handling in the central and downstream DRB countries by taking into account national demand and international markets and ECE recommendations;
- Preparing and implementing for the central and lower DRB countries typical pilot projects (especially in UA, MD, RO, BG, YU and B-H) to train and support farmers in the application of best agricultural practice *(to be followed up in Phase 2)*.

(iv) Policy development for wetlands rehabilitation under the aspect of appropriate land use

In the case of conflicting land use, priorities were in the past usually set on extension and intensification of human settlement and economic activities, with the consequence that ecologically sensitive areas/wetlands were steadily impacted in their function or completely disappeared.

The present project component shall address questions in relation to typical situations of inappropriate land use resulting from municipal settlement, agricultural activities, hydraulic structures and their impact on ecologically sensitive areas and wetlands and effects of transboundary pollution with particular attention to nutrients and toxic substances. Standardized concepts shall be developed for the rehabilitation of selected sensitive areas/wetlands and for an integrated land use especially around these wetlands. In Phase 2 of the Project, these concepts shall be implemented and required policy, legal and institutional reforms shall be applied for integrated land use as models for the DRB.

The main tasks of the proposed activity in Phase 1 can be summarized as follows:

- Define methodology for integrated land use assessment around wetlands (called "wetland areas");
- Carry out case studies for selected wetland areas and assess inappropriate land use (e.g. forestry, settlements and development zones, agriculture and hydraulic structures);
- Develop alternative concepts and strategies for achieving integrated land use and management in chosen wetland areas, including required actions and measures (regulatory and legal issues, economic fines and incentives, compensation payments, etc.)

(v) Industrial reform and development of policies and legislation for application of BAT (best available techniques including cleaner technologies) towards reduction of nutrients (N and P) and dangerous substances

Industrial reform is one of the most urgent and most critical issues in most central and lower DRB countries and can certainly not be efficiently initiated by an environmental programme of this scale. Considering that in transition countries the industrial production is actually very low, it is not surprising, that industry generates only respectively 5 and 8 % of nitrogen and phosphorus that enter the Danube River.

Taking into account the expected revitalization of industries, it is necessary to focus on industrial policies and on a review of legislation in order to ensure that environmental considerations are adequately taken into account and that mechanisms for compliance are put in place.

The project should also address the problem of industrial “hot spots” in relation to Significant Impact Areas (SIA) as identified in the Transboundary Analysis, to determine transboundary nutrients and toxics pollution from particular industries and identify possible solutions (BAT - best available techniques including cleaner technologies, treatment process, etc.) to reduce the emissions of toxic substances and nutrients in particular. While Phase 1 of the Project focuses on the identification of gaps and opportunities for reforms, Phase 2 will later develop pilot applications of BAT concepts in selected countries.

The subject of this component is closely related to the work of the EMIS/EG, therefore the project component should closely cooperate with the envisaged UNIDO-TEST MSP to ensure that interventions at the policy/legislative and at the technical (demonstration) levels are complementary. In this context, the execution of the project component through an IAA or sub-contract with UNIDO should be considered.

The following steps should lead in Phase 1 to an efficient implementation of this project component:

- Up-dating the basin-wide inventory on industrial and mining “hot spots” (EMIS inventory) taking into account emissions of nutrient and toxic substances;
- Reviewing data and information on the actual status of industrial production techniques involving nutrients (N and P) and dangerous substances in the DRB countries;
- Reviewing policies and relevant existing and future legislation for industrial pollution control and identification enforcement mechanisms on a country level *(to be followed up in Phase 2)*;
- Comparing and identifying gaps between relevant EU and national legislation *(to be followed up in Phase 2)*;
- Developing necessary complementing policy and legal measures for the introduction of BAT taking into account regulatory and legal issues, awareness raising, financial fines and incentives, etc *(to be followed up in Phase 2)*;
- Identifying, in relation to Significant Impact Areas, industrial “hot spots” having a significant impact on water resources and water quality *(to be followed up in Phase 2)*;
- Organizing workshops with participants from relevant ministries, industrial managers, banking institutions, introducing information on best available technologies, financial support, etc. *(to be followed up in Phase 2)*.

(vi) Policy reform and legislation measures for the development of cost-covering concepts for water and waste water tariffs, focusing on nutrient reduction and control of dangerous substances

The funding of water sector-related investments and the cost coverage for the operation of WWTP in the DRB countries largely depends on economically and socially acceptable water and waste water tariffs. An assessment of water and waste water tariffs is currently being conducted with financial support from the Austrian Environmental GEF Trust Fund. Based on the results of this study, which will be available in June 2001, policy and legislative measures shall be developed for interested DRB countries to assure the introduction of economically and socially acceptable tariffs. This project component shall help to improve the investment possibilities for reduction of nutrients and toxic substances. Phase 1 of the Project will focus on developing country-specific concepts for tariff reforms while the Phase 2 will analyze and finalize these results in cooperation with all national stakeholders.

The implementation of new policy and legislative measures can make a substantial contribution towards increasing internal funds and releasing public budgets and can thus facilitate the provision of baseline contributions for new investment projects in transboundary nutrient reduction and pollution control.

Based on the results of the assessment of Water and Waste Water Tariffs, the following actions shall be considered in Phase 1:

- Analyzing significant differences /deficiencies regarding water sector relevant legislation, level of tariffs, status of metering, level of illegal and unaccounted for consumptions, collection rate, etc.; assessing the potential for the increase of revenues of the companies operating in the water and waste water sector;
- Developing appropriate concepts for tariff reforms aimed at cost covering models in line with the EU WFD (on a country level).

(vii) Implementation of effective systems of water pollution charges, fines and incentives, focusing on nutrients and dangerous substances

Most DRB countries are not putting into operation any effective system of fines for water pollution or respective incentives as applied in industrialized Western European countries. The basic idea is, therefore, to assist the interested DRB countries to develop an effective system of fines and incentives to promote rational utilization of water resources and to prevent or reduce effects of environmental pollution, specifically nutrients and certain toxics. Within the broad framework of fines and incentives particular attention should be given on discharges of nutrients and toxic pollutants with significant transboundary effects. Phase 1 of the Project will produce a DRB-wide assessment of presently existing tools and institutional mechanisms, while Phase 2 will prepare and suggest guidelines for the most appropriate charges, fines and incentives.

The main tasks of the proposed component in Phase 1 can be summarized as follows:

- Analyzing the present systems of water pollution charges, fines and incentives in the DRB countries and identifying significant deficiencies (types and basis of charges, fines and incentives, effectiveness, collection procedures, exemptions, etc);
- Identifying the most essential and effective water pollution charges, fines and incentives, assessing the main obstacles/barriers to their introduction and develop enforcement mechanisms;
- Assessing the institutional and economic capabilities of the particular DRB countries for a reform of water pollution charges, fines and incentives.

(viii) Recommendations for the reduction of phosphorus in detergents

The EU policies and legislation do not provide for phosphate detergents phase-out plans. The present situation in the EU countries is based on voluntary arrangements set by the industry. Phase 1 of the Project will assess the country-specific situation and discuss measures to overcome reduction barriers, while Phase 2 will later periodically check the implementation of recommendations.

The basic idea of this project component in Phase 1 is to:

- Reviewing the existing legislation, policies and voluntary commitments;
- Developing recommendations for phosphorus reduction in detergents in line with EU regulations and commonly agreed international standards;
- Developing proposals for enforcement and compliance (economic, financial incentives);
- Organizing a basin-wide workshop dealing with the implementation of recommendations at national level *(to be followed up in Phase 2)*.

The country-specific recommendations and implementation schedules should be mostly based on the experiences from Western European countries and should take into account the institutional and especially the economic capability of the particular DRB countries.

3.2 Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin

One of the essential and positive results of the previous GEF Pollution Reduction Programme was the successful support provided for institutional strengthening and capacity building of government, local administration and the private sector (NGOs) in the participating DRB countries.

In order to ensure efficient implementation of the ICPDR policies and related Investment Programme defined under the DRPC, it is recommended that national capacities of the central and the sub-ordinate national level should be reinforced. In this context, exchange of information, reinforcement of environment research and standardization of methods and parameters are essential to strengthen regional cooperation and joint decision making in implementing the SAP. At the national level "Inter-ministerial Committees" will be set up to assure adequate coordination and implementation of policies, legislation and projects for nutrient reduction and pollution control.

The respective project components defined in the frame of the present Regional Project (Phases 1 and 2) are primarily designed to support the ICPDR in establishing an appropriate Management and Information System, and in establishing appropriate indicators for evaluation and monitoring of programme and project implementation (process, status and stress reduction). Secondly, the Expert Groups established under the ICPDR should be supported in carrying out the particular tasks and activities clearly dealing with nutrient reduction and transboundary issues, which might not be adequately covered without GEF assistance.

(i) Setting up of "Inter-ministerial Committees" for development, implementation and follow-up of national policies legislation and projects for nutrient reduction and pollution control

To assure adequate coordination and implementation of policies, legislation and projects for nutrient reduction and pollution control, "Inter-ministerial Committees" will be set up at the national level involving all technical, administrative and financial departments. The following steps are foreseen :

- Evaluate existing national structures for coordination of water management and water pollution control (follow up action on report on "Existing and planned inter-ministerial coordination mechanisms relating to pollution control and nutrient reduction", August 2000, Annex 8.1);
- In cooperation with national governments, propose adequate structures, including technical, administrative and financial departments to coordinate the review and implementation of policies, legislation and projects for nutrient reduction and pollution control;
- Assist Governments in setting up national "Inter-ministerial Committees" and provide initial guidance for the implementation of GEF project components.

(ii) Development of operational tools for monitoring, laboratory and information management and for emission analysis from point and non-point sources of pollution with particular attention to nutrients and toxic substances

The subject of this component is professional and financial support aimed at reinforcing the activities related to emission control (EMIS/EG) and monitoring of water quality, laboratory and information management (MLIM/EG), particularly aiming at improvement, further development and application of:

- the Danube Water Quality Model;
- the Modelling Nutrient Emissions in River Systems (MONERIS);
- the Analytical Quality Control (AQC).

If adequately designed and provided with reliable data, these two models and the quality assurance programme are essential tools for a profound assessment of transboundary nutrient and toxic pollutant flows as well as an assessment of the expected effects of nutrient and other pollution reduction measures. The present nutrient reduction plans can be adjusted and the implementation of policy measures can be focused on specific areas or sectors. Phase 1 of the Project will prepare the upgrading of existing operational tools, while Phase 2 will secure their effective application and the DRB-wide data availability.

Further assistance is proposed in Phase 1 to strengthen other activities in the MLIM/EG and the EMIS/EG, with particular attention to the following nutrient/pollution reduction and transboundary issues:

- Harmonizing water quality standards and quality assurance for nutrients and toxic substances *(to be followed up in Phase 2)*;
- Assisting in the creation of a database and emission inventory for point and non point sources of phosphorus and nitrogen, including maps *(to be followed up in Phase 2)*;
- Optimizing TNMN and identifying sources and amounts of transboundary pollution for substances on the list of EU priority substances *(to be followed up in Phase 2)*.

In this context, consultation and working meetings of the Expert Groups for particular research work (modelling, development of nutrient data base, etc) should be arranged in cooperation with international consultants specialized in the respective field of work. For this purpose, special TOR have to be defined by the Expert Groups.

To assure the coherence and viability of data collection in all Danube countries, it would be necessary to provide training and additional laboratory and monitoring tools, in particular for those countries that:

- still need to be brought to the same operational level (Ukraine, Moldova) or
- are not yet integrated in the MLIM and EMIS systems (Bosnia-Herzegovina, FR Yugoslavia).

(iii) Improvement of procedures and tools for accidental emergency response with particular attention to transboundary emergency situations

The recent accidental pollution of the Tisza river from mining activities and the effects of NATO intervention in Yugoslavia, the bombing of petrochemical and other industrial complexes in the Danube River Basin, led to a contamination of ground water and rivers with toxic substances (PCBs, PAHs, cyanide, etc.), the accumulation of heavy metals in sediments and to a degradation of ecosystems (fish kill). Hence, urgent support is needed to improve preventive and emergency response measures.

The subject of this project component is to support development activities for accident emergency warning and prevention of accidental pollution. The experience from the recent accidental pollution events indicates that the basically established AEPWS/EG needs substantial improvement before it can become a satisfactory tool for adequate management of transboundary contamination from catastrophic events. During Phase 1 of the Project, the operational bases of the alarm system will be

upgraded and preventive policy measures recommended. During Phase 2, the practical application of the alarm system will be further extended in the DRB.

In this context, technical assistance and reinforcement of operational conditions are required in Phase 1 for:

- The reinforcement of operational conditions in national alert stations (PIACs) and geographical extension of the AEPWS in Bosnia & Herzegovina and the FR of Yugoslavia[2)] (*to be followed up in Phase 2)*;
- The completion of the inventory presently available only for the upper Tisza River Basin, and evaluation of all high accidental risk spots in all countries in the Danube River Basin, in line with EU legislation, considering that similar accidental "hot spots" exist in many transition countries *(to be followed up in Phase 2)*;
- The designing of preventive measures, the adjusting of national legislation and improved compliance with safety standards *(to be followed up in Phase 2)*;
- Maintenance and calibration of the Danube Basin Alarm Model (DBAM), to predict the propagation of the accidental pollution and evaluate temporal, spatial and magnitude characteristics in the Danube river system and to the Black Sea *(to be followed up in Phase 2).*

(iv) Support for reinforcement of ICPDR Information and Monitoring System (DANUBIS)

The Danube Information System (DANUBIS) has been developed with the financial support from the Austrian Government (computer equipment and software) and from the Austrian Environmental Trust Fund, administered by UNOPS (concept and development of the Information System). The system is presently installed at the Permanent Secretariat of the ICPDR (Vienna International Center) and fully operational.

Further professional/technical and financial support is needed for the build-up and extension of DANUBIS to assure adequate administration of the information and reporting obligations under the DRPC. A new interactive web-site is to be adapted ensuring a smooth flow of textual and geographic information between the national level and the central unit at the ICPDR Secretariat to achieve permanent monitoring and exchange of information on pollution control and nutrient reduction measures and to disseminate information to the public on policy and legal matters related to nutrient reduction: GEF nutrient reduction policies, relevant EU guidelines and directives, other information from international initiatives/conventions concerning land based sources of pollution, agricultural practices, fertilizer application, phosphate free detergents, etc. During Phase 1 of the Project, the DANUBIS website extension will be made fully operational, during Phase 2 the new interactive website will be built up.

This would require in Phase 1 that:

- The ICPDR Information System is fully developed and used by its expert groups and other operational bodies;
- All Contracting Parties of the ICPDR and other participating countries would be linked to DANUBIS, which applies the development and implementation of national linkages and establishment of operational units to communicate also in case of accidental emergency situations *(to be followed up in Phase 2);*

[2)] The FR of Yugoslavia is situated in an extremely important geographical position in the center of the Danube River Basin where the most important tributaries, Tisza, Sava and Drava are joining the Danube. During the recent accidental pollution the AEWS has also informed Yugoslavia and cooperated with its technical staff to monitor the effects of accidental pollution. The UNEP Balkan Task Force and the EU-Baia Mare Task Force have closely cooperated with Yugoslavian authorities in the assessment of accidental pollution and the design of emergency measures.

- DANUBIS would be reinforced through the implementation of an interactive web-site to integrate further textual, numerical and digital mapping information and to fulfill all the requirements of the work of the nutrient reduction programme (communication, monitoring, public information, etc.) *(to be followed up in Phase 2);*
- An extensive training programme would be launched and series of workshops be organized at different users levels and in different regions of the DRB to train and assist futures users in the best use of the tools made available by the system (*to be followed up in Phase 2)*.

It should be noted that the ICPDR assure regular maintenance and updating of the information with particular attention the Data Base developed within the frame of the previous GEF project (Danube Pollution Reduction Programme.

(v) Implementation of the Memorandum of Understanding between the ICPDR and the ICPBS relating to discharges of nutrients and hazardous substances to the Black Sea

This component implies assisting the ICPBS and the ICPDR in further implementing the Memorandum of Understanding (MoU), identifying appropriate modalities for the implementation and developing of a monitoring system for commonly agreed process, stress reduction and environmental status indicators for the Black Sea. During the Phase 1 of the Project, a joint working programme will be worked out and approved, which will be practically applied in Phase 2.

The main tasks for the implementation of the MoU in Phase 1 can be summarized as follows:

- Developing a joint work programme for MoU implementation *(to be followed up in Phase 2)*;
- Defining and agreeing on status indicators to monitor nutrient transport from the Danube and change of ecosystems in the Black Sea *(to be followed up in Phase 2)*;
- Defining and establish reporting procedures *(to be followed up in Phase 2)*;
- Re-establishing and organizing regular meetings of the Joint Danube-Black Sea working groups to evaluate progress of nutrient reduction and recovery of Black Sea ecosystems *(to be followed up in Phase 2)*;
- Organizing joint Danube-Black Sea meeting to approve and sign MoU by both Commissions.

(vi) Training and consultation workshops for resource management and pollution control with particular attention to nutrient reduction and transboundary issues

In order to assure sustainability of appropriate resources management and pollution control and to assure the same level of understanding throughout the Danube River Basin, it is necessary to provide training in the fields of environmental analysis and planning, management and impact assessment for nutrient reduction and control of toxic substances through workshops, consultation meetings and study tours for participants from government, local administration, NGOs and other stakeholder from the private sector (professional associations, opinion leaders, etc.). Besides this, additional materials and equipment should be supplied and technical assistance should be provided where necessary. During the Phase 1 of the Project, the various training programmes will be worked out and trainers trained, during the Phase 2 Project these trainings will be organized and evaluated.

Besides the workshops on policy development and legislation to be organized in the frame of each of the above-described project components, training courses should be provided in Phase 1 in the following fields:

- Policy development and legal frame for transboundary cooperation in nutrient reduction and control of toxic substances (*to be followed up in Phase 2);*
- Technical and legal issues of river basin planning and transboundary water resources management in line with the new EU Water Framework Directive with a view to ensuring effective nutrient reduction *(to be followed up in Phase 2);*
- Technical and legal issues (land reclamation) of wetland restoration and management to assure nutrient removal *(to be followed up in Phase 2);*

- Innovative technologies for municipal and industrial waste water treatment; use of sewage and animal waste as fertilizer to reduce nutrient emissions *(to be followed up in Phase 2)*;
- Technical and legal issues of management and control of use of fertilizers and manure *(to be followed up in Phase 2);*
- Preparation of documents for nutrient reduction projects with international co-funding and application of GEF criteria concerning incremental cost calculation *(to be followed up in Phase 2);*
- Training courses for NGO activities *(to be followed up in Phase 2).*

The last training course should also focus on methodology and standards for economic and financial analysis of bankable projects with international co-funding; and in particular on identification and documentation of nutrient reduction projects according to GEF requirements and guidelines regarding baseline / incremental cost, transboundary effects, etc.

The proposed training courses should be organized with the assistance of experienced international consultants in a series of three-to-five-days workshops and should also be run in the national languages at least once in each Project Phase (i.e. twice during the total project period of 5 years). Regional Workshops designed to reinforce transboundary cooperation should be attended by at least two or three participants from each DRB country. One essential task will be to prepare, prior to the workshops, adequate documents and case study materials for dissemination among the participants.

3.3 Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems

All activities outlined in the previous chapter on institutional strengthening and capacity building contribute to awareness raising in a broader sense. The publication through the mass media and through publications of the ICPDR (Danube Watch etc.) of the results of ICPDR´s and its Expert Groups´ activities, in particular the results of workshops and consultation meetings, constitute an excellent opportunity to raise public awareness. These actions of awareness raising should primarily address representatives from central and local governments and from administration and - to a lesser extent - from the private sector.

The Regional Environmental Center (REC) in Hungary has elaborated a project proposal for GEF financial support for the Building of Environmental Citizenship to Support Transboundary Pollution Reduction in the Danube. Public awareness and public participation, as well as cooperation with the government and administration, shall be demonstrated in the frame of two pilot projects in Hungary and Slovenia.

The present GEF Regional Project component has a much wider spectrum and geographical outreach but should nevertheless benefit from the REC initiative and establish close cooperation during its implementation period.

The objective of the Project is to enhance awareness raising in the civil society and the reinforcement of the role of NGOs in water management and pollution reduction (nutrients and toxic substances) with particular attention to transboundary cooperation and river basin management. This can best be achieved through practical measures and the support of community-based activities for rational resources management, transboundary cooperation and pollution control with particular attention to nutrient reduction. Financial support should be provided to assist the implementation of community-based demonstration projects in various Danube River Basin countries (Small Grants Programme).

Cooperation of the civil society and in particular the local NGOs is essential to achieving the objectives and goals of the ICPDR and the new Danube Regional Project. Particular attention will be given to the reinforcement and the role of the Danube Environmental Forum (DEF), which is the umbrella organization of the NGOs in the Danube River Basin. The previous GEF Project has

provided some support to facilitate the organization of NGO cooperation at the national level and the establishment of the Danube Environmental Forum.

Within the frame of the present GEF project component, the support for awareness raising should be extended (i.e. make each project more relevant), linked with the reinforcement of NGO activities and should focus on concrete demonstration measures of pollution control, nutrient reduction and transboundary cooperation. In this context, the following project components have been identified as particularly promising:

(i) Support for institutional development of NGOs and community involvement

This should come in the form of technical/professional assistance and financial support for the Danube Environmental Forum and for national NGOs working on transboundary pollution issues and nutrient reduction. During Phase 1 of the Project, this will be focusing on making the DEF fully operational and preparing the training programmes which will be followed up in Phase 2 with the actual training and publications:

- Support for the DEF Secretariat for operation, communication and information management *(to be followed up in Phase 2)*;
- Organization of consultation meetings and training workshops on nutrients and toxics issues *(to be followed up in Phase 2)*;
- Publishing special NGO publications in national languages on nutrients and toxic substances*(to be followed up in Phase 2)*;
- Organization of training courses for the development of NGO activities and cooperation in national projects (nutrient reduction) *(to be followed up in Phase 2)*.

(ii) Applied awareness raising through community-based "Small Grants Programme"

It is important and necessary to provide administrative, professional and financial support for the extension of the GEF-Small Grants Programme. This is mainly focusing in Phase 1 of the Project on the identification of suitable projects and the preparation of applications for financial support. In Phase 2 of the Project grants will be awarding and the programme will be implemented:

- Identifying NGO grants programme and projects for reduction of nutrients and toxic substances and mitigation of transboundary pollution;
- Designing and implementing a region-wide granting programme focusing on demonstration activities and awareness campaigns for sustainable land management and pollution reduction (nutrients) in the agricultural, industrial and municipal sectors *(to be followed up in Phase 2)*;
- Designing and implementing two granting programmes at the local and national level in terms of small scale community based investment projects for pollution control, rehabilitation of wetlands, best agricultural practices, reduction of use of fertilizers, manure management, improvement of village sewer systems, etc. *(to be followed up in Phase 2)*.

Based on previous experience and good performance, this project component shall be implemented with technical and policy guidance from the ICPDR, by the Regional Environmental Center (REC) in Hungary. Through its national offices, the REC will inform local communities and NGOs to develop and submit relevant project proposals and will organize and follow-up in the 2nd Phase of the Project the implementation of selected projects for nutrient reduction and awareness raising.

(iii) Organization of public awareness raising campaigns on nutrient reduction and control of toxic substances

The practical awareness and daily sensitivity of the general public on pollution problems and their transboundary impacts is still very low in most DRB countries. The many new local NGO small grants projects organized within this GEF Project frame (component 3.3.(i)) will become more relevant for the public's opinion-making at national and regional scale if they will be complemented by nation-wide awareness campaigns. Therefore, the GEF Project aims at raising awareness on accidental pollution and prevention and nutrient reduction in daily life through media activities and campaigning. Phase 1 of the Project will prepare and start first public activities in the DRB countries, which will be intensified in Phase 2 of the Project. Further support will be given in both Phases by the publication of periodicals in English and in national languages.

Phase 1 of the Project will therefore focus on:

- Conceptualization and implementation of public awareness raising campaigns on nutrients issues *(to be followed up in Phase 2)*;
- Development and production of materials for public press and mass media on nutrients and toxics *(to be followed up in Phase 2)*;
- Support to the publication of scientific documents and regular papers or special issues on water management and pollution reduction with particular attention to nutrient issues and Black Sea recovery *(to be followed up in Phase 2)*.

3.4 Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances

The development and the upgrading the monitoring and information systems is of significant importance for transboundary cooperation in water quality and water management, and of common interest for the Danube and the Black Sea countries. Particular attention will be given to the development of indicators (process, stress reduction and environmental status indicators) to monitor progress of project implementation. For this purpose, special methodologies will be developed to assess sediments (heavy metals, toxic substances) and nutrient removal capacities of wetlands. Also economic mechanisms will be analyzed to encourage investments in nutrient reduction measures.

Regarding specific issues on monitoring and preparation of information, the following project activities have been proposed to be carried out within the frame of Phase 1 and 2 of the Danube Regional Project:

(i) Development of indicators for project monitoring and impact evaluation

To assure efficient monitoring and evaluation of project implementation, and to document project and programme achievements, it is necessary - in line with EU and the existing international requirements - to establish an operational system of indicators (process, stress reduction and environmental status) under the ICPDR. It should be considered, that under the new EU Water Framework Directive criteria for the assessment of the ecological status of the rivers and for monitoring the achievement of good ecological status will have to be applied. Within Phase 1 of the Project, new indicators and methodologies will be developed, which will be established and applied in Phase 2.

The following tasks should therefore be carried out in Phase 1 under this component:

- Establishing a system for M&E in using specific indicators for process (legal and institutional frame), stress reduction (emissions, removal of hot spots) and environmental status (water quality, recovery of ecosystems) to demonstrate results of programme and project implementation and to evaluate environmental effects of implementation of policies and regulations (nutrient reduction) *(to be followed up in Phase 2);*
- Reviewing in the frame of the ICPDR Trans National Monitoring Programme (TNMN) specific indicators (e.g. bio-indicators) for emission control and water quality monitoring with particular attention to nutrients and toxic substances *(to be followed up in Phase 2)*;
- Establishing monitoring system in using specific progress indicators (benchmarks) for project implementation (GEF- projects activities) *(to be followed up in Phase 2)*;
- Implementing ecological status assessment in line with requirements of EU WFD using specific bio-indicators to demonstrate effects of pollution /nutrient reduction in water-bodies and ecosystems*(to be followed up in Phase 2)*.

(ii) Analysis of sediments in the Iron Gate reservoirs and impact assessment of heavy metals and other dangerous substances on the Danube and Black Sea ecosystems

(*This component will be carried out in the Phase 2 of the Project.)*

(iii) Monitoring and assessment of nutrient removal capacities of riverine wetlands

In the frame of the GEF Pollution Reduction Programme, the rehabilitation and management of about 600.000 hectares of wetlands and floodplains in the DRB have been proposed. In the World Bank-GEF Partnership Investment Facility for Nutrient Reduction, the restoration or creation of wetlands is one of the three types of projects eligible for funding. It is generally recognized that the removal capacity varies considerably according to water flow, concentration, loads and natural conditions of the wetlands.

In the frame of Phase 1 and 2 of the Projects, a quantified approach could be made for the DRB wetlands to better assess their removal capacities and the possibilities in wetland management to optimise such processes, while still giving priority to the ecological needs of these ecosystems. These results would considerably improve and disseminate world-wide the knowledge about nutrient removal through wetlands rehabilitation and would define the technical and economic parameters for efficient wetlands management.

This proposed project component, which would support a larger GEF need in the frame of Targeted Research, should cover in Phase 1 preparatory tasks and would later in Phase 2 provide the actual removal observation programme and management guidance:

- Classifying the wetlands and floodplains in the DRB by category and define potential observation sites;
- Defining the methodological approach for assessment of nutrient removal capacities of wetlands and flood plains.

(iv) Danube Basin study on pollution trading and corresponding economic instruments for nutrient reduction

In the frame of the study on Financing Pollution Reduction Measures in the DRB – Present Situation and Suggestions for New Instruments, the implementation of a system of nutrient discharge quotas and auctions has been proposed. Considering the diversified economic conditions of the riparian countries and the particular relation of the Danube countries to the Black Sea, new approaches, in particular economic instruments, could be necessary to achieve efficiency in nutrient reduction reforms. Whenever the principle of “pollutant auctions” is presently not compatible with the EU water quality guidelines, which are based on the emission principle, interesting and innovative approaches could be

developed and possibly introduced in the forthcoming EU policies to solve the nutrient problem. Further, the results would also contribute to support a larger GEF need for Targeted Research in developing economic instruments for nutrient reduction.

This component should therefore assess the viability and feasibility of “pollution trading” concept in the DRB countries (Phase 1 of the Project) and initiate a broad discussion with all stakeholders on alternative economic concepts for pollution control (Phase 2 of the Project). It should further be noted that the present study proposed for the Danube River Basin (considering in particular the EU policies and directives) is complementary to a similar study conducted by the World Bank in the frame of the Black Sea Regional Project, which shall develop the concept of nutrient emission trading taking into account the specific conditions of the Black Sea countries.

For this purpose, it is proposed to prepare an EU-Danube specific assessment covering in Phase 1 the following main issues:

- Reviewing existing concepts of successful “pollutant trading / auctions” or corresponding economic instruments in the water and air pollution sector in the US, Australia and Europe;
- Studying the general possibilities to establish the idea of "pollution trading" or corresponding economic instruments for nutrient reduction under the EU policies and directives in the Danube River Basin;
- Assessing the main problems / obstacles for "pollution trading" and corresponding economic instruments in the DRB and the interest of the particular DRB countries for implementation.

4 Sustainability and Participation

The proposed Danube Regional Projects (Phases 1 and 2) have to be seen as a logical continuation of the GEF assistance to the Danube Environmental Programme. The Danube Pollution Reduction Programme has established the necessary conditions for the ICPDR and for the DRB countries to assure efficient implementation of policies and measures for pollution reduction and resource management. The proposed Danube Regional Projects can build on a very favorable framework for sustainability and participation, and on the findings and recommendations of:

- the SAP 1994 as the agreed-upon policy document of the EPDRB focusing on policies and strategies for pollution control and resource management,
- the Common Platform for the Development of National Policies and Actions for Pollution Reduction under the DRPC, representing a summary of policies and actions developed in the frame of the Pollution Reduction Programme,
- the Danube Pollution Reduction Programme (DPRP) and the Inventory of Investment Projects (Database) providing the operational basis for promoting investments for pollution reduction measures.

Institutional capacities and arrangements: With its entry into force on 22 October 1998, the Danube River Protection Convention (DRPC), to which the ECE-Convention for the Protection and Use of Transboundary Waters (Helsinki Convention 1992) is the framework, became the overall legal instrument for cooperation and transboundary water management in the Danube River Basin. Since mid-1999 all bodies of the ICPDR, the Expert Groups and the ICPDR Permanent Secretariat have been fully operational. The primary objective of the proposed Danube Regional Project is to support the ICPDR in order to achieve a well-balanced integrated implementation of the Common Platform, the PRP and the forthcoming JAP. It is assured that there is a full developed and functioning institutional framework for project performance.

As the ICPDR is permanently sustained via financial contributions of the member states, the GEF intervention would support and strengthen the ICPDR and its Expert Groups to improve technical and management capacities for the implementation of nutrient reduction measures identified in the Pollution Reduction Programme.

The participation of the contracting parties including the European Community, the signatory countries (Ukraine) and other cooperating countries (Bosnia-Herzegovina and Yugoslavia) of the DRB is assured through the work of ICPDR-Steering Group and the through the Conference of Parties, which is the highest body for the implementation of the Danube River Protection Convention.

Government commitment: All countries in the DRB have actively participated in the frame of the elaboration of the Pollution Reduction Programme and have provided all necessary information for the preparation of the present Project Brief (PDF-Block B actives) and thus demonstrated their interest in and commitment to pollution control, nutrient reduction and sustainable water management. Further, it should be noticed that central and downstream Danube countries are actually preparing for accession to the European Union and are therefore committed to applying the European water directives and guidelines for pollution reduction with particular attention to the EU Nitrate Directive, the Urban Waste Water Directive and the implementation of the new EU Water Framework Directive.

Legal Frame: The Danube River Protection Convention is a legally binding instrument, which provides a solid framework and a legal basis for cooperation, including enforcement. The International Commission for the Protection of the Danube River (ICPDR) has been established according to the Danube River Protection Convention provision (Art.18) and has its seat in Vienna, Austria. The ICPDR and its bodies are responsible for the implementation of the Danube River Protection Convention.

Stakeholder participation: The development of NGOs and the re-establishment of the Danube Environ-mental Forum as an umbrella organization for all Danube NGOs was an essential contribution of the previous GEF assistance to assure public participation in the planning and plan implementation processes. Further, the GEF Small Grants Programme has facilitated the implementation of community-based projects in the middle and lower Danube countries. It is thus assured that the existing structures of local NGOs and the DEF will play an important role in the implementation of the GEF Danube Regional Project and in the development and application of new policies and regulation to improve water quality and to assure rational use of resources.

5 Lessons Learned

Some important lessons have been learned from a range of GEF and other environmental planning projects in the Danube region, and especially from the GEF-supported Danube Pollution Reduction Programme (DPRP), which was completed in June 1999. In the frame of this project, the Danube countries cooperating under the DRPC have achieved important results in terms of capacity building and institutional strengthening. The planning process in elaborating the Transboundary Analysis and in revising the SAP, which involved stakeholders from the local governments, scientific institutions and NGOs had created a high momentum in adopting GEF operational principles for the protection of international waters and ecosystems. Further, the interaction with other organization, in particular the EU Phare and Tacis, the World Bank, the EBRD, etc., and joint actions with the Black Sea Programme have set new standards for regional cooperation. These positive achievements will be consolidated in implementing the Danube / Black Sea Basin Strategic Partnership.

The first phase of the DPRP indicated how time consuming and difficult it is to set up institutional structures, information networks and to introduce new approaches of planning in countries that are in a continuous process of political and economic transition. Based on this experience, it is recommended that – wherever possible - the newly created institutional settings, networks and methodological tools should be reinforced through the Danube Regional Project. Special emphasis should be put on the maximum utilization of the participatory approach that is now fully understood and accepted by the participating countries.

In many transition countries, the policy and legal frame is presently being reviewed and adjusted, focusing in particular on unclear land ownership and uncontrolled resource management (forestry, mining, etc.), which lead to environmental degradation and damage. In many countries, compliance with environmental laws and regulations is not controlled and is consequently very low. This is partially due to structural and organizational weaknesses and more to budgetary limitations.

Inter-ministerial coordination is another common and serious problem for project implementation when coordinating structures are missing at national levels. The involvement and cooperation of all relevant governmental bodies, in particular the Ministry of Finance, Ministry of Agriculture, of Land Reform, of Foreign Affairs, etc. is essential in the early project preparation phase.

Another lesson learned is that project activities conducted by international expert teams without close integration and cooperation with experts from the relevant Danube countries are often not recognized. In the frame of the Environmental Programme for the Danube River Basin (EU Phare) many project components have failed to be sufficiently coordinated with the ICPDR and its Expert Groups and thus did not respond to the expressed needs of the beneficiaries. It is therefore recommended that all project components should be carried out under the guidance of the ICPDR and in close cooperation with its expert bodies and that highly qualified national experts/consultants – available in all DRB countries – should be contracted.

A particular feature impacting basin-wide project activities is that of the disparities between the DRB countries, which have clearly different institutional, administrative and economic capabilities and are confronted with qualitatively different requirements. Particular attention should be paid on the one hand to the EU accession countries that have reached a high level of competence and organization and, on the other hand, to the central Danube Basin countries as Bosnia-Herzegovina and Yugoslavia, which have been affected by the war and political instability.

In this context, IW: LEARN, a distance education programme whose purpose is to improve the global management of transboundary water systems, will contribute to improve regional cooperation and capacity building. Following the experience gained in the DPRP, IW: LEARN should be connected to the Danube Information System (DANUBIS) and used as an interactive conference capacity across and within GEF international waters projects for sharing information and learning related to nutrient reduction and river basin and coastal zones management. Training courses started during the DPRP will be revitalized and continued to enhance technical knowledge for water managers in nutrient reduction and sustainable management of water resources and ecosystems in the Danube River Basin.

6 Project Budget and Financing

6.1 GEF Budget Contribution

The total financial requirements for the performance of the proposed Phase 1 Danube Regional Project are USD 5,000,000. According to the provisional estimates the allocation of the budget by cost categories is anticipated as follows:

BUDGET OF THE DRP BY COST CATEGORIES	USD	Percentage
Permanent professional project staff	386,000	7.7 %
Project Support Staff	256,250	5.1 %
Subcontractors / International consultants	1,404,000	28.1 %
National consultants from the DRB countries	1,080,000	21.6 %
Workshops, training courses, meetings	536,890	10.8 %
Identification and preparation of "GEF- Small Grants Projects"	153,350	3.1 %
Awareness raising and public information material	100,000	2.0 %
Equipment for nutrient monitoring/information	267,000	5.3 %
Project operational costs	246,140	4.9 %
Organizational support for DEF and NGOs	200,000	4.0 %
UNOPS/ICPDR Support cost	370,370	7.4 %
Total	**5,000,000**	**100 %**

The allocation of the budget by the main project components according to the budget proposal (Annex 4) is as follows:

	BUDGET BY MAIN PROJECT COMPONENTS	USD	Percentage
(1)	Creation of sustainable ecological conditions	2,425,400	48.5 %
(2)	Capacity building and reinforcement of transboundary cooperation	821,940	16.4 %
(3)	Strengthening of public involvement and reinforc. community actions	827,650	16.6 %
(4)	Reinforcement of monitoring, evaluation and information systems	554,640	11.1 %
	UNOPS/ICPDR Support cost	370,370	7.4 %
	Total	**5,000,000**	**100,0 %**

From the GEF budget contributions 48.5 % is earmarked for the development of policies and legal instruments for nutrient reduction and will be invested directly in supporting the work at the national level. 16.4 % of the budget is aimed at strengthening regional cooperation for implementing the ICPDR policies and related investment programmes (JAP) and at reinforcing monitoring and information capacities. In both first project components a total of 10.8 % is allocated for training courses and preparation of workshops.

The budgetary allotment for awareness raising and NGO activities is 16.6 % to assure participation of the civil society in nutrient reduction activities. 11.1 % of the GEF budget is earmarked for strengthening monitoring, evaluation and information systems. 7.4 % is earmarked as support cost for the executing agencies.

Detailed Budget by Project Components **and Assigned Baseline Costs (USD)**		**Project Budget**		**Baseline Costs**
		GEF	**Particip. Danube Countries**	
1	**Creation of sustainable ecological conditions for land use and water management**			
	General project costs	629,032		400,000
1.1	Development and implementation of policy guidelines for river basin management	447,600	1,188,000	22,470,000
1.2	Reduction of nutrients and harmful substances from agricultural point and non-point sources through agricultural policy changes	380,600		16,740,000
1.3	Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point and non-point sources	269,200		16,810,000
1.4	Policy development for wetland rehabilitation under the aspect of appropriate land use	246,400		9,460,000
1.5	Industrial reform and development of policies and legislation for application of BAT	269,600		16,215,000
1.6	Policy reform and legislation measures for the development of cost-covering concepts for water and waste water tariffs	163,000		7,780,000
1.7	Implementation of effective systems of water pollution charges, fines and incentives, focusing on nutrients and dangerous substances	92,000		4,700,000
1.8	Recommendations for the reduction of phosphorus in detergents	122,000		3,780,000
	Subtotal	**2,619,432**	**1,188,000**	**98,355,000**
2	**Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the DRB**			
	General project costs	243,255		2,400,000
2.1	Setting up of "Inter-ministerial Committees" for development, implementation and follow-up of national policies, legislation and projects for nutrient reduction and pollution control	38,000	181,500	3,720,000
2.2	Development of operat. tools for monitoring, laboratory and information management and for emission analysis from point and non-point sources of pollution	178,720	1,089,000	22,320,000
2.3	Improvement of procedures and tools for accidental emergency response with particular attention to transboundary emergency situations	81,160	762,300	15,624,000
2.4	Support for reinforcement of ICPDR Information System (DANUBIS)	202,160	1,089,000	20,832,000
2.5	Implementation of the "Memorandum of Understanding" between the ICPDR and the ICPBS relating to discharges of nutrients and hazard. Substances to the Black Sea	27,600	217,800	4,464,000
2.6	Training and consultation workshops for resource management and pollution control with particular attention to nutrient reduction and transboundary issues	116,800		137,800,000
	Subtotal	**887,695**	**3,267,000**	**207,160,000**
3	**Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems**			
	General project costs	167,212		10,100,000
3.1	Support for institutional development of NGOs and community involvement	275,300	143,220	2,570,000
3.2	Applied awareness raising through community based "Small Grants Programme"	188,350	55,440	9,030,000
3.3	Awareness raising campaigns on nutrient reduction & control of toxic substances	263,000	263,340	108,800
	Subtotal	**893,862**	**462,000**	**21,808,800**
4	**Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances**			
	General project costs	167,121	0	
4.1	Development of indicators for project monitoring and impact evaluation	126,150	363,000	7,440,000
4.2	Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other substances on the Danube and the Black Sea ecosystems	0	396,000	5,580,000
4.3	Monitoring and assessment of nutrient removal capacities of riverine wetlands	109,340	528,000	7,520,000
4.4	Danube Basin study on pollution trading and corresponding economic instruments for nutrient reduction	196,400	396,000	5,580,000
	Subtotal	**599,011**	**1,683,000**	**18,680,000**
	PDF-B	**350,000**		
	PROJECT TOTAL	**5,350,000**	**6,600,000**	**353,443,800**

6.2 Contributions from the ICPDR and participating countries:

Total ICPDR and Danube country contributions : **6,600,000 USD**

- **The ICPDR, Permanent Secretariat** will facilitate overall project implementation with an annual operational budget of 800,000 USD for a period of 2 years : **1,600,000 USD**
- **The ICPDR Expert Groups** will assure the implementation of project components. The cost for experts, operation, participation and communication can be estimated at 1,200,000 USD per year, for a period of 2 years : **2,400,000 USD**
- **The participating countries** will contribute in the frame of joint activities under the DRPC to project implementation through financial and in kind contributions (experts, equipment, operational cost), estimated at 100,000 USD per country and year, for 13 countries and 2 years : **2,600,000 USD**

6.3 National Capital Investments and Development Costs (2001 – 2006)

The Joint Action Programme (JAP) has been developed under the ICPDR, and is in most cases coherent with the Five-Year Nutrient Reduction Action Plan prepared in the frame of the PDF-Block B activities (see Annex 8-3). The following costs for policy and legislation development and for capital investments for municipal and industrial waste water treatment and wetland restoration have been identified :

Total capital investments[3)] **4.40 billion €**

- Assured national funding 1.72 billion €
- Assured international loans 1.16 billion €
- Expected grants (national and EU) 0.66 billion €
- Additional funding to be raised 0.86 billion €

Total cost for non-structural measures **0.51 billion €**

It should be noted that from the planned investments of 4.40 billion €, about 3.54 billion € have been made available from national funding sources, whereas 0.86 billion € remain to be raised. 510,989,000 € are estimated for developing adequate monitoring and enforcement systems in the frame of the EU accession process[4)] and are considered as non-structural investments to be mobilized by all Danube countries.

6.4 World Bank Partnership and UNDP (estimated 5 years period)

W.B. Nutrient reduction projects

- Loans 210,000,000 USD
- GEF Grants 70,000,000 USD

} **280,000,000 USD**

UNDP country programmes (2 to 4 years) **1,069,000 USD**

3) 4.0 billion USD, respectively 3.22 billion USD available and 0.78 billion USD to be raised

4) Sector Case Study, WRc, Report CO 3291/2, 1993

6.5 Investments from EU for environmental measures (accession countries)

The following investment from the EU is for a period of seven years to assist accession countries to improve environmental management and to build or modernize waste water treatment plants and other technical structures; it can be assumed that about half of the Phare money is earmarked for non-structural measures:

Total investment for a period of 7 years [5)]	**13.5 billion €**
o EU Stability Pact for Southeastern Europe (Danube countries)	3.0 billion €
o Phare for environmental protection (Danube countries)	5.3 billion €
o ISPA funds for environment and infrastructure (Danube countries)	3.5 billion €
o SAPARD funds for agricultural sector (Danube countries)	1.7 billion €

6.6 Assistance from bilateral sources (estimated 2 to 4 years)

o USAID (amount allocated for environmental/sustainable development projects in 2000 out of which 120.000.000 for structural projects)	**162,000,000 USD**
o Danish Environmental Protection Agency (DEPA)	not available
o Netherlands (Wetlands Ukraine)	

6.7 Assistance provided through private sector organizations (international and Danube NGOs for a 2 to 4 years period)

Total Investments (estimated 2 to 4 years period)	**29,437,800 USD**
o Regional Environmental Center (REC): support for national NGO activities (environmental, sustainable development, awareness raising)	22,500,000 USD
o World Wide Fund for Nature (WWF): Implementation of environmental projects in cooperation with governments and national NGOs	5,800,000 USD
o Danube national NGOs (ECCG-Romania, Distelverein-Austria)	1,137,000 USD

6.8 Total contributions for environmental protection and nutrient reduction in the Danube River Basin

The total allocations earmarked for pollution control and nutrient reduction in the Danube River Basin fall into two categories:

1. **Non-structural projects (estimation for 2 years period):** Reinforcement of legislation and institutional mechanisms for transboundary cooperation (Danube Regional Project for nutrient reduction):

• GEF UNDP: Danube Regional Project Phase 1 (2 years) + PDF-B	5,350,000 USD
• ICPDR and participating countries for Danube Regional Project (2 years)	6,600,000 USD
• National investments for monitoring and enforcement systems (2 years)	186,000,000 USD
• International private organizations and NGOs 2 to 4 years)	11,774,800 USD
• Bilateral Assistance (USAID) and UNDP (2 to 4 years)	17,869,000 USD
• EU programme for Danube accession countries, 2 years period (10 % of Phare programme is estimated for non structural measures)	137,800,000 USD

[5)] 12.28 billion USD, applied exchange rate : 1 € = 0.91 USD

The GEF budget and the contributions from the ICPDR and the participating countries are considered as "incremental" costs for the overall development and implementation of new policies and legislation in line with GEF operational principles for international waters and with EU environmental directives. The non-structural "baseline" cost is estimated at 353.4 million USD, out of which the Danube countries will contribute 52.6 % and the EU in the frame of the Phare programme 40.0 %. NGOs will provide 3.3 % of the total costs. However, it has to be taken into account that the actual figures are incomplete and that real bilateral and NGO contributions in the coming 2 to 5 years will be a great deal higher than indicated.

Summary of capital investments by country and expected nutrient reduction (5 years programme)

Country	Funding Scheme (€)			Expected Reduction (t/y)	
	Assured Funding	Funds to be raised	Total Investments	N	P
Germany	231,000,000		231,000,000	4,091	74
Austria	264,000,000		264,000,000	3,950	404
Czech Republic	104,000,000	43,000,000	147,000,000	1,091	62
Slovakia	54,000,000	65,000,000	118,000,000	2,574	147
Hungary	682,000,000	5,000,000	687,000,000	6,708	1,522
Croatia	12,000,000	421,000,000	433,000,000	5,233	814
Slovenia	382,000,000	2,000,000	384,000,000	1,509	239
Bosnia & Herzegovina		176,000,000	176,000,000	4,700	853
Yugoslavia	785,000,000		785,000,000	6,793	4,850
Bulgaria	37,000,000	88,000,000	125,000,000	2,683	599
Romania	493,000,000		493,000,000	11,860	1,591
Moldova	493,000,000		493,000,000	6,901	905
Ukraine	5,000,000	62,000,000	67,000,000	486	65
TOTAL	**3,542,000,000**	**862,000,000**	**4,404,000,000**	**58,579**	**12,138**

2. Structural projects (estimation for 2 years period) : Investment figures as presented in the previous chapters 6.3, 6.4 and 6.5 have been theoretically adjusted to a 2 years period to demonstrate the capital investments during the project period. In the project period, the following investments for waste water treatment facilities, wetland restoration, the reduction of pollution from agricultural non-point sources, etc. could be expected:

- GEF World Bank Partnership Programme (loans and GRF grants) 112,000,000 USD
- Bilateral Assistance (USAID, other not available) 120,000,000 USD
- Joint Action Programme (assured funds from Danube countries) 1,289,000,000 USD
- EU programme for Danube accession countries, 2-year period (ISPA, SAPARD, Stability Pact, 90% Phare for structural measures) 3,600,000,000 USD

In the frame of the ICPDR Joint Action Programme (5-Year Nutrient Reduction Plan), the Danube countries contribute from own resources and internal loans for an estimated 2 years period 25.1 % to finance structural projects (municipal and industrial waste water treatment plants, wetlands restoration, agricultural projects etc.). The EU provides the biggest share of 70.3 % of investments to support national efforts of EU accession countries.

The contribution of the World Bank Partnership represents 2.2 % of investments for structural projects and is complementary to the UNDP/GEF Danube Regional Project. Other contributions, e.g. from the EBRD or the EIB, are not taken into account.

Summary of investments for reinforcement of legislation and institutional mechanisms (non-structural projects / programmes) by country and expected nutrient reduction (5 years programme)

Country	Funding Scheme (USD)						Expected Reduction (t/y)	
	Governments	UNDP	USAID	EU	NGO	Total	N	P
Germany	51,290,900					51,290,900	6,800	111
Austria	43,400,000				1,583,300	44,983,300	7,700	114
Czech Republic	15,781,800	95,000	2,455,000	14,681,900	2,983,300	35,997,000	1,500	33
Slovakia	29,309,100	125,000	5,454,000	27,266,400	2,983,300	65,137,800	4,500	170
Hungary	57,490,900		5,454,000	53,484,000	2,741,700	119,170,600	4,650	380
Croatia	9,581,800		3,954,000	8,914,000	2,741,700	25,191,500	3,000	130
Slovenia	18,036,400	80,000	2,455,000	16,779,300	2,741,700	40,092,400	3,450	220
Bosnia & Herzegovina	16,345,500		3,954,000	15,206,200	2,500,000	38,005,700	3,600	220
Yugoslavia	50,727,300		2,455,000	47,191,800	2,741,700	103,115,800	7,200	700
Bulgaria	21,981,800		3,954,000	20,449,800	3,466,700	49,852,300	2,300	400
Romania	127,381,800		6,955,000	118,503,800	3,503,700	256,344,300	12,100	1,270
Moldova	6,200,000		2,455,000	5,767,900	483,300	14,906,200	397	70
Ukraine	17,472,700	769,000	2,455,000	16,254,900	966,600	37,918,200	2,800	200
TOTAL	**465,000,000**	**1,069,000**	**42,000,000**	**344,500,000**	**29,437,000**	**882,006,000**	**59,997**	**4,018**

Total Expected Nutrient Reduction from Capital Investments and Investments for Non-structural Projects	**118,576 tons N/y = 22 %**
	16,156 tons P/y = 33 %

7 Incremental Costs

The description and calculation of baseline and incremental costs can adequately be done for technical investment projects designed for the protection and management of international waters, respectively the conservation of biodiversity. In these cases it is possible to determine for each expected output and for each activity the respective baseline and incremental costs and analyze the resulting domestic and global benefits.

In the case of the Danube Regional Project, "incremental" costs are considered to be the GEF project cost (including PDF-B) of 5,350,000 USD. The special contributions of the ICPDR and the participating countries for implementing the DRPC, which amount to 6,600,000 USD, are considered as "incremental" co-financing costs. The Project, with a total financial support of 11,950,000 USD will reinforce - in addition to the investments described under "baseline" cost - the capacities of the ICPDR and the participating countries to address adequately the problem of nutrient reduction. "Incremental" costs are specially defined to strengthen transboundary cooperation under the DRPC for the development of national policies and legislation and the identification of jointly implemented priority actions for nutrient reduction leading to the restoration of the Black Sea ecosystems.

For the definition of "baseline" costs directly related to the development of adequate monitoring and enforcement systems at the national level, the results of the WRc Sector Case Study from 1993[6)] have been taken into account. According to this report, the present systems of monitoring are budget inadequate, staff resources are overstretched and laboratory facilities overloaded. The report estimates the annual cost of compliance for Bulgaria 10 million €, Hungary 12 million €, Romania 28 million € and Slovakia 6 million € based on per capita cost of 1.16 € at 1990 prices. Based on this information, the total cost for compliance, also for those Danube countries, which are not yet in the approximation process but which are undertaking special efforts to upgrade their legislation and mechanisms for compliance with international and EU standards has been estimated at 186,000,000 USD for the coming 2 years.

Other "baseline" costs, with a total of 416.9 million USD, but only indirectly related with project activities, can be identified in relation to non-structural projects for the development of policies, legislation, institutional mechanisms and enforcement systems, which are financed in the frame of technical assistance projects from bilateral and international sources :

- Bilateral Assistance (USAID) and UNDP 17,869,000 USD
- International private organizations and NGOs 11,774,800 USD
- EU programme for Danube accession countries, 5 years period (10 % of the Phare Programme is estimated for non structural measures) 137,800,000 USD

Considering that the approximation process of the Danube countries will take between 10 and 20 years, including the introduction of new environmental standards in line with international and EU directives, the "incremental" support of the Project will enhance the process with particular attention to nutrient reduction and will considerably accelerate the development and implementation of policies, regulations and adequate monitoring and enforcement systems for nutrient emissions and reduction of nutrient loads discharged into the Black Sea.

Structural projects concerning actually planned investments in waste water treatment facilities, wetland restoration, agricultural pilot projects and other environmental measures, contributing mostly to pollution reduction from point sources or in-stream pollution reduction, amount to 12.6 billion USD. To demonstrate the capital investments during the project period, investment figures as presented in chapters 6.3, 6.4 and 6.5 of the Project Brief have been theoretically adjusted, indicating an amount of 5.1 billion USD for a period of 2 years. These capital investments are not contributing to project implementation and therefore are not considered as baseline cost.

6) Sector Case Study, WRc, Report CO 3291/2, 1993

8 Cost-effectiveness

Taking into account the social and economic development which will take place in the coming 10 to 20 years in the Danube transition countries and considering the EU approximation process and the need to adapt environmental standards to international and EU directives, it is evident that investments in environmental protection and management of resources are necessary to assure a sustainable development in the countries of the Danube River Basin.

It is to be expected that most Danube countries - mainly those in transition – will in the next five to seven years see their GDP grow at an annual rate of 2 to 4 % ending up in five years from now at 10 to 20 % above its current level. This economic growth will be the result of economic recovery in transition countries and new investments in industry, agriculture and services. The development and implementation of adequate environmental standards and mechanisms for compliance is, therefore, essential to assure sustainable development in the region.

The implementation of projects for waste water treatment in the urban and industrial sectors (including agro-industries) is part of national investment programmes for pollution reduction from point sources, summarized in the Five-Year Nutrient Reduction Action Plan and the Joint Action Plan of the ICPDR respectively. According to these documents, capital investments will be about 4.4 billion € (4.0 billion USD). Considering EU engagements for accession countries and other multilateral and bilateral assistance in the form of soft loans and grants (World Bank/GEF), the additional financial assistance for implementation of structural projects will be 9.4 billion USD. These investments will lead to an annual reduction of 58,600 tons of nitrogen and 12,100 tons of phosphorus representing 10.6 % and 24.8 % respectively of the total nutrient loads discharged into the Black Sea.

Non-point sources of pollution in relation to land use and agricultural activities represent about half of all nutrients, in particular nitrogen, discharged into the Black Sea. It is assumed that through the development and implementation of policies, legislation and mechanism for compliance, nutrient emissions from non-point sources (land use and agriculture) can be considerably reduced. The actual estimations in the Five-Year Nutrient Reduction Action Plan show that development and implementation of appropriate policies and legislation will lead to a reduction of about 60,000 tons of nitrogen and 4,000 tons of phosphorus, representing 10.9 % and 8.2 % respectively of total nutrient loads discharged into the Black Sea.

The corresponding investments for the development of new policies, legislation and monitoring and enforcements systems in line with international and EU directives are 913.9 million USD, out of which the major part – 465.0 million USD or 50.9 % – is considered as national contributions and part of direct baseline costs. 344.5 million USD or 37.7 % is provided from the EU Phare programme to the accession countries and 72.5 million USD or 7.9 % is provided in the frame of international, bilateral and non-governmental assistance. These investments for technical assistance are also baseline cost but only indirectly related to project implementation measures.

Considering the GEF/ICPDR investment of 11.95 million USD for a period of 2 years and taking into account additional investments of 19.9 million USD in the 2nd Phase of the project (July 2003 to June 2006), in the particular sector of nutrient reduction and restoration of the Black Sea ecosystems, the benefits for nutrient reduction from non-point sources of pollution - 10.9 % for nitrogen and 8.2 % for phosphorus - can be calculated as representing 20 % of the value for capital investments for nutrient reduction in point sources projects of the Five Year Nutrient Reduction Action Plan, which is equal to 800.0 million USD, respectively 320.0 million USD for a period of 2 years[7)].

[7)] The Pollution Reduction Programme Report, GEF/Environmental Programme for the DRB, June 1999 indicates in its methodological approach that 20 % of investments in WWTP are specified for nutrient reduction. Considering a total investments in the 5-YNRAP of 4.4 billion € = 4.0 billion USD, 20 % of the investment = 800.0 million USD would be needed for pollution reduction from point sources. This amount is considered as the comparative benefit for removal of nutrient also from non-point sources of pollution.

The cost-effectiveness of this Project lies in the opportunity to improve water quality in general and to reduce transboundary nutrient loads in particular, thus contributing to the rehabilitation of the Black Sea ecosystems. Considering incremental cost of 11.95 million USD for the 1st Phase of the Project, the benefits of the Project, at a cost-effectiveness ratio of 1:27 for the first two years period and of 1:25 for the full fives years period, are considerable in terms of its contribution to reducing and mitigating serious damage to regional and globally important waters and ecosystems.

9 Project Risks

The success of two Regional Projects for the Danube and the Black Sea depends ultimately upon the political willingness and the financial and technical means of the contracting parties and participating countries to cooperate. This willingness depends not only on issues related to national or international security but also on changing political and economic conditions of the countries involved. Risks for the performance of the proposed Danube Regional Project might be occur in the following fields:

(i) Commitment of the UNDP/GEF

Taking into account that the submission of the Strategic Partnership Programme for Nutrient Reduction in the Black Sea and the Danube Basin to the GEF Council in November 2000 was deferred due to resources constraints, the actual Project as prepared in 2000 with a total budget of 15 million USD had to be split in two phases. The present Project Brief with a budget of 5 million USD, to be approved by the GEF Council in May 2001, covers the 1st Phase of the Project from July 2001 to June 2003. The 2nd Phase, with a budget of 10 million USD, will cover the period from July 2003 to June 2006. The 2nd tranche to be approved by the GEF Council in May 2002 includes 16 million USD for capacity building out of which 10 million are earmarked for the Danube and 6 million for the Black Sea Programme. The approval of these funds is essential to assure the continuation of the activities initiated in the 1st Phase of the project and to achieve the ultimate goals.

(ii) Commitment of participating countries

At the institutional level the conditions for the implementation of the Danube Regional Project are already set-up through the structures of the ICPDR, which have already been successfully utilized in the frame of the Pollution Reduction Programme. Taking into account that financial inputs from the participating countries are relatively small, there are probably no significant risks for project performance. All Danube countries are prepared to deliver in-kind contributions in the frame of the ICPDR Expert Groups and experience has shown that special in-kind contributions to the project implementation are also voluntarily made available.

Considering political and administrative constraints and slow decision-making process, a certain risk can be expected for the actual implementation of the findings and recommendations of the project, especially regarding the issues of policy reforms and changes of legislation. Also administrative obstacles might hamper the implementation of measures for exacting compliance.

(iii) Methodological approach

The methodological approach as applied for the implementation of the proposed project components is in line with the work programme of the ICPDR and corresponds national standards. It is therefore unlikely to expect major problems. However, as mentioned in point (i), the ultimate goals of the project will only be achieved if the funding for the 2nd Phase of the GEF assistance will be made available in time.

For project implementation the choice of qualified experts is an essential prerequisite. Experts and consultants should be familiar with the social and economic conditions in the Danube River Basin and in the participating countries, knowledgeable about modern planning methodology and the efficient organization of consultation meetings and workshops.

The scope for the organization of workshops and awareness building activities should be clearly defined from the beginning and accepted by the participating countries; this should include the precise definition and agreement for the selection of participants, which is a joint responsibility of the stakeholders involved.

The same agreements have to be reached for the identification of sub-contractors and national consultants, which should respond to defined levels of professional standards and be acceptable to the ICPDR and the Executing Agency.

(iv) Delivery of counterpart contribution and availability of information

Considering administrative and financial constraints, participating countries might not be able to provide in time necessary data for the proposed project components and administrative support for meetings and workshops.

Hence, requests for counterpart contribution are to be precisely defined and timely delivery has to be agreed upon. The type of analysis and information needed has to be clearly identified in order to assure the timely availability of precise and viable information.

10 Institutional Frameworks and Implementation

10.1 Institutional Arrangements

Taking into account that there was a successful GEF project in operation for 6 years, which resulted in a revised SAP (Common Platform for Development of National Policies and Actions for Pollution Reduction under the DRPC), and a Pollution Reduction Programme for the DRB, it is proposed to make utmost use of institutional mechanisms and structures which are already operational.

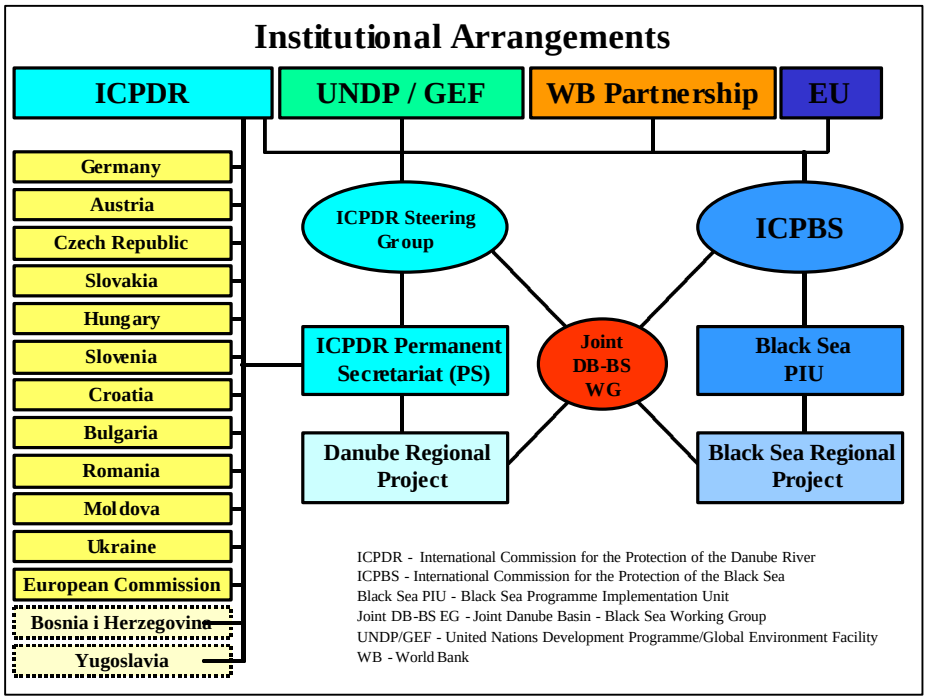
In this context it is proposed that the International Commission for the Protection of the Danube River (ICPDR) will become the responsible organization for project implementation in cooperation with UNOPS as executing agency. A Project Manager, under the supervision of the ICPDR Executive Secretary, shall establish close cooperation with all participating countries, organize efficiently the planning process and assure timely execution of all project components.

The ICPDR Steering Group(SG) should guide the implementation of the Danube Regional Project and assure engagement and cooperation at the national level. For this purpose the ICPDR SG should meet :

- at the beginning of Phase 1 of the Project to review and define scope, planning approach and work programme of the project;
- during project implementation use regular, twice a year, Steering Group meetings to review and assess the progress, to evaluate completed project components and to make recommendations for the continuation and/or adjustment of activities;
- at the end of Phase 1 of the Project to assess and approve the final results at a joint review meeting and to re-examine the planned activities of the 2nd Phase of the Project.

Regarding the elaboration of detailed scope of work and actual performance of the various project components it is proposed to use the professional competence and country specific experience of the existing Expert Groups established under the ICPDR : EMIS, MLIM, AEPWS, the newly created Expert Group for River Basin Management and implementation of the EU Water Framework Directive (RBM EG) and the Ad-hoc Ecological Expert Group (ECO EG).

At the central level, the Project Manager, under the supervision of the ICPDR Executive Secretary and following the directives of the ICPDR Steering Group, will have the mandate to organize and coordinate the planning process and implementation activities and to assure, with UNOPS administrative support, proper management of the GEF project funds.



At the national level it is proposed to incorporate as far as possible the professional competence, experience and knowledge of the Country Programme Coordinators (CPC) assigned in the framework of the previous GEF-Pollution Reduction Programme.

During Phase 1 of the project, "Inter-ministerial Committees" will be put in place to assure that all technical, administrative and financial departments are involved to facilitate and coordinate the implementation of policies, legislation and projects for nutrient reduction and pollution control.

At the regional level, a Joint Danube Basin-Black Sea Working Group (DB-BS/WG) shall assure proper coordination of activities between the Danube Project, the Black Sea Project and the W.B. Partnership Programme. Besides this coordinating role of project activities, the WG shall also follow-up the implementation of the Memorandum of Understanding for the Protection of the Black Sea agreed upon by the two Commissions. The Joint DB-BS Working Group shall meet at least twice a year after the respective Steering Group meetings of the two Commissions.

According to the broad spectrum of activities it is envisaged that most of the particular project components should be carried out by consultant services (on the basis of sub-contracts for international consulting companies and individual consultants from the DRB countries). Objectives, scope and terms of reference will have to be defined in close co-operation with the respective Expert Groups of the ICPDR and approved by the Steering Group Meeting.

In this case the project personnel employed on a fixed term basis and located in the offices of the ICPDR Permanent Secretariat can be restricted to :

- one Project Manager, specialist in environmental policy, with particular experience in institutional arrangements and water pollution legislation and knowledge of EU environmental directives and guidelines and nutrient issues;
- one specialist for awareness raising, organization of training courses and follow up of NGO activities, in particular implementation of the Small Grants Programme;
- one project administrator, with particular experience in budgeting, follow-up of expenditures and establishment of contracts;
- two administrative project assistant/secretary (support staff).

For specific tasks, conceptualization of activities and evaluation of results, highly specialized international consultants shall be assigned.

10.2 Monitoring and Evaluation

Project objectives, activities outputs and emerging issues will be regularly reviewed and evaluated by the competent bodies of the executing and implementing agencies (UNDP/GEF and UNOPS) and the ICPDR.

During the 1st Phase of the Project, a Monitoring and Evaluation System shall be developed and indicators for pollution reduction (process and stress indicators) and environmental status indicators will be defined. Progress indicators for project implementation are defined in the Logical Frame Matrix and will be revised at the initial phase of the Project to relate to specific activities and outputs of project components. Taking into account that in Phase 1 in most cases only intermediary results will be achieved and considering that the timeframe is relatively short, only process indicators can reasonably be applied. Final results, in measurable terms of stress reduction and environmental status will be reached in Phase 2 of the Project (5 years after begin of project activities). Annex 2.2 shows measurable indicators for Phase 2 of the Project demonstrating environmental impact and allowing final evaluation of project implementation measures. 90,000.00 USD, representing 1.8 % of the project budget is earmarked for the development of indicators for project monitoring and impact evaluation.

The annual review will focus on performance (effectiveness, efficiency and timeliness) and evaluate the results in applying the defined progress indicators. At the ICPDR Steering Group Meeting, the

Project will submit and present an APR (Annual Project/Programme Report) in line with UNDP requirements and also participate in the GEF's PIR (Project Implementation Review) exercise each year.

The project will be subject to an external Project Performance Review at the end of the two-years project period. On these occasions an independent consultant team shall make an overall assessment of the project advancement and prepare an independent evaluation. During this review the team should pay particular attention to formulating recommendations for adjustments of procedures and activities of the 2nd Project Phase as needed.

Members of the ICPDR Steering Group should meet after the external review to evaluate project performance and make recommendations for the continuation and/or adjustment of activities in the 2nd Phase and should assess and approve the final results of the joint review meeting.

At the end of the 2nd project period, the project team, under the guidance of the ICPDR Permanent Secretariat, shall prepare a Project Performance Evaluation Report, which should be endorsed by the ICPDR Plenary Session.

10.3 Implementation Schedule

A provisional implementation schedule for the proposed Phase 1 Danube Regional Project is presented in Annex 5.

The project is supposed to start in the second half of 2001 and have a total duration of 24 months. This period includes a project mobilization phase of four months for putting in place the institutional structures and for the organizational preparation of project activities.

Each project component has a preparatory phase of two-to-three months and a consolidation phase of two-to-three months at the end of Phase 1 of the Project. This arrangement facilitates the preparation of the 2nd Project Phase from July 2003 to June 2006.

ANNEXES

ANNEX 1 Incremental Cost Analysis and Matrix – Project Phase 1

INCREMENTAL COST ANALYSIS

1. BROAD DEVELOPMENT GOAL

The Danube River Basin is an extensive unique ecosystem in which the balance between the non-living and living resources on one hand and human population on the other has been repeatedly disturbed. Due to the numerous environmental disturbances within its own limits, the Danube River has a negative impact on the complex ecosystems of the Black Sea. All Danube countries are urgently seeking to address environmental protection of transboundary waters under the Danube River Protection Convention.

The current economic conditions of the countries in transition do not allow them to fully respond to the needs for environmental protection and implementation of pollution control measures. Therefore, the GEF project will assist the countries in transition to respond to regional and global environmental issues with particular attention to pollution control and nutrient reduction.

The major perceived problems of the Danube River Basin can be summarized as follows:

- Significant degradation of water quality and ecosystems
- Change in hydrological systems
- Increased nutrient loads to the Black Sea
- Reduced quality of life and human health
- Limited capability to create a sustainable mechanism for co-operation that will be embodied in an international legal and policy framework for co-operation in protection and sustainable use of the Danube River.

The long-term development objective of the proposed Regional Project is to contribute to sustainable human development and promotion of economic activities in the DRB through reinforcing the capacities of the participating countries in developing effective mechanisms for regional cooperation and coordination, in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.

2. BASELINE

The need for protection and management of the Danube River Basin environment and its resources has preoccupied the Danube countries for some years. However, while the EU member States, Germany and Austria have already adapted their legal frame according to EU requirements, the Danube countries in transition are still making great efforts to revise and adapt their legislation to EU standards.

Recently, largely as a consequence of the development of previous UNDP/GEF project "Danube Pollution Reduction Programme", there has been an increasing awareness that legal measures and projects to reduce emissions from point and non-point sources of pollution are urgently needed, in particular measures that will substantively contribute to reducing the transport of nutrients, in particular nitrates to the Black Sea.

The commitment to cooperate and seek common solutions towards implementing nutrient reduction and pollution control measures has been underlined during the development of the Pollution Reduction Programme and the elaboration of the Transboundary Analysis. In addition, the Danube countries have cooperated either in the frame of ICPDR or bilaterally and multilaterally, through conventions and agreements, with a view to jointly formulating and implementing transboundary pollution reduction and environmental protection actions and measures.

However, national mechanisms for pollution control in transition countries are often not fully operational and the inter-ministerial structures for transboundary cooperation in water related environmental issues are weak or missing in most of the transition countries.

All Danube countries, in particular Germany and Austria, have made significant investments in an effort to reduce emissions and improve environmental standards. These ongoing programmes form an important part of the project baseline. In addition, there is financial support being provided by international and bilateral organizations. Contributions came from EU PHARE and TACIS, GEF/UNDP, USAID, DEPA, and other multilateral and bilateral donors as well as from international NGOs.

The ICPDR Expert Groups and the Joint Danube-Black Sea Ad-hoc Working Group have already formulated and facilitated the development of common strategies and policies to assure a reduction of nutrient load in the Black Sea. It is a solid baseline for co-operative research and joint implementation of measures for pollution abatement. Moreover, the ICPDR Information System, DANUBIS, has contributed to an efficient exchange of information throughout the Danube Basin countries.

In November 2000 the ICPDR and the countries participating in the implementation of the Danube River Protection Convention (DRPC) have agreed to develop a common approach for implementing the EU Water Framework Directive. This important decision provides the common platform for cooperation in setting up mechanisms and in implementing programmes and projects for sustainable water management, protection of ecosystems, pollution control and nutrient reduction also in view to rehabilitate the ecological conditions of the Black Sea.

Considering that the approximation process of the Danube countries will take 7 to 20 years, including the introduction of new environmental standards in line with international and EU directives, the "incremental" support of the Project will enhance the process with particular attention to nutrient reduction and will considerably accelerate the development and implementation of policies, regulations and adequate monitoring and enforcement systems for nutrient emissions and reduction of nutrient loads discharged into the Black Sea.

3. GLOBAL ENVIRONMENTAL OBJECTIVE

The global environmental objective of the proposed project is to ensure a regional approach to (i) the development of national policies and legislation and, (ii) the identification of priority measures and actions for nutrient reduction and pollution control, so as to obtain maximum long-term benefits while protecting human health and ecological integrity and ensuring sustainability.

The potential global and regional benefits are likely to be substantial, including the protection of international waters, sustainable management of natural resources and the maintenance of a diverse aquatic ecosystem. The project will also develop effective mechanisms for regional co-operation and co-ordination geared towards the implementation of pollution control and nutrient reduction measures.

The GEF interventions will be accompanied by the current support through bilateral and multilateral programmes in the basin.

4. GEF PROJECT ACTIVITIES

GEF will provide the catalytic support for incremental costs associated with the development of nutrient reduction policies and the creation of efficient mechanisms for regional co-operation under the Danube River Protection Convention to assure efficient control and monitoring of transboundary benefits of the reduction of nutrients and toxic substances within the Danube River Basin.

The strengthening of transboundary co-operation will contribute to an efficient implementation of the ICPDR Joint Action Programme under DRPC with particular benefits gained due to nutrient reduction in the Black Sea and the rehabilitation of its ecosystems.

The approach would be consistent with the guidance for the GEF "Waterbody-based Operational Programme." For this project, the goal is to assist the Danube countries, especially the transition countries, in making changes in the ways that human activities are conducted in different sectors so that the Danube River and its multi-country drainage basin can sustainably support the human activities. Projects in this Operational Programme focus mainly on seriously threatened water bodies and the most imminent transboundary threats to their ecosystems as described in the Operational Strategy. Consequently, priority is placed on changing sectoral policies and activities responsible for the most serious root causes needed to solve the top priority transboundary environmental concerns which is given for this present project by the pollution and nutrient reduction.

The GEF alternative would support the proposed project in:

- Developing nutrient reduction policies and legal instruments and measures for exacting compliance
- Strengthening institutional mechanism and building capacity for transboundary cooperation in nutrient reduction
- Raising awareness and reinforcing NGO participation in implementing "Small Grants" Projects
- Strengthening the monitoring and information mechanisms on transboundary pollution control and nutrient reduction

This regional project represents a motivating case in which the improvement of transboundary co-operation and co-ordination shall help ICPDR and the countries to reinforce their efforts aimed at an efficient implementation of the DRPC.

In addition, improved transboundary co-operation will provide a better basis for the sustainable use of natural resources and the conservation of biological diversity in the Danube river basin. The cost of doing this is evidently incremental to the national efforts of all thirteen countries, focused on maximizing environmental benefits through comprehensive global and domestic environmental management strategies.

In its 1st Phase, the Project will reinforce existing implementation mechanisms, analyze and prepare methodological and practical approaches for various project components and organize workshops to train trainers in technical, legal and economic aspects of water management and pollution reduction. The 2nd Phase of the Project will build up on the results of the 1st Phase and assure full implementation of all project components and efficient achievement of set targets for sustainable management of waters and protection of ecosystems in the Danube River Basin and the Black Sea.

5. SYSTEM BOUNDARY

For the purpose of this project, the area of GEF interventions is defined by the hydrological catchment basin of the Danube river, as regards the international water boundaries, and beyond this, the natural resources of the Danube countries, as regards the natural resources management and biodiversity conservation objectives.

The project will inevitably result in a large number of domestic and regional impacts and benefits and attention has been paid to include these within the system boundary.

The participating countries include Germany, Austria, the Czech Republic, the Slovak Republic, Hungary, Slovenia, Croatia, Bosnia & Herzegovina, Yugoslavia, Bulgaria, Romania, Moldova and Ukraine.

Over the long-term, a variety of domestic benefits would be gained through the implementation of the proposed project. The most valuable domestic benefits to be gained from the project are associated with substantially strengthened institutional and human capacity in pollution control and water quality assessment, increased technical knowledge and public awareness of Danube environmental issues and transboundary co-operation, and improved national capacities in environmental legislation and enforcement as well as in natural resources management.

Bilateral and multilateral programmes focused on domestic improvements in water management and pollution control have been included within the baseline in order to clearly distinguish between actions most likely to result in domestic benefits (baseline bilateral projects) and those that will mainly result in regional and global ones (the present project).

Summary Incremental Costs (2 years period):

Baseline	353,443,800 USD
Alternative	365,393,800 USD
Incremental	11,950,000 USD
GEF Financing:	
Project Phase 1	4,629,630 USD
PDF-B	350,000 USD
Project Support Costs	370,370 USD
Co-Finance	6,600,000 USD
Total project Cost	11,950,000 USD

Incremental Cost Matrix – Benefits

Component	Benefits	Baseline	Alternative	Incremental
OBJECTIVE 1: **Creation of sustainable ecological conditions for land use and water management**	**Domestic**	1. EU member states, Germany and Austria, have adapted their legal frame to EU standards and are improving conditions through additional investments to assure compliance; 2. Danube countries in transition are in different stages of adapting their legislation to EU standards; 3. Countries in transition have to revise their water and waste water tariffs to assure amortization of investments and economic operation of treatment plants, considering in particular third stage for nutrient removal; 4. At the national level, most Danube countries in transition have no efficient mechanisms or inter-ministerial structures for cooperation in water related environmental issues (pollution control, nutrient removal, etc.); 5. All Danube countries have developed investment programmes to reduce emissions and improve environmental standards; the total investment of committed priority projects for municipal, industrial, agricultural waste water treatment facilities and wetland restoration projects is 4.4 billion €.	1. EU member states Germany and Austria will continue to improve compliance with guidelines for nutrient reduction from non-point sources of pollution through changes in agricultural and land use practices (eco-farming); 2. Countries in transition in the central and lower DRB will increase their efforts to adapt national legislation to EU standards with particular attention to the EU nitrate directives and phosphorus phase-out regulations for detergents; 3. Economic conditions for investments and operation of waste water treatment facilities in the municipal, industrial and agro-industrial sectors, in particular for nutrient reduction, will be improved through adopted regulations and new tariffs for waste water management; 4. Policies and regulations as well as mechanisms for compliance will be developed for nutrient reduction from non-point sources of pollution with particular attention to agricultural practices (organic farming) and land management (green river belts, wetlands restoration; etc).	1. Review of the present situation, update of EMIS emission inventory for agricultural and industrial "hot spots" and development of new concepts for improved harmonization of policies and regulations with those existing in EU member states and improved mechanisms for compliance are developed to assure efficient reduction of nutrients and toxic substances : • from agricultural non-point sources of pollution by introducing best agricultural practices (agrochemicals, organic farming) and land management (green river belts, wetlands restoration; etc); • from agricultural point sources of pollution (animal farms, agro-industries) by introducing adequate waste water treatment and best manure handling practices; • from industrial and mining companies by introducing "clean" (BAT) industrial production and safety regulation in the industrial sectors; 2. Analysis to assess options to revise tariffs, incentives and fines in all transition countries to assure amortization of investments and coverage of operational cost for waste water treatment and nutrient reduction; 3. Analysis to achieve improved legislation adapted to EU standards in all transition countries and measures for compliance in relation to the implementation of the Nitrate Directive and regulations for phosphorus phase-out in detergents.

Component	Benefits	Baseline	Alternative	Incremental
OBJECTIVE 1: Creation of sustainable ecological conditions for land use and water management	**Global-Regional**	1. Either in the frame of the ICPDR or bilaterally and multilaterally, the Danube countries formulate common policies and actions for transboundary cooperation in pollution reduction and environmental protection; compliance is often not assured 2. The ICPDR has created working group to assure efficient implementation of the new EU Water Framework Directive using river basin management as the appropriate approach to assure stakeholder participation and transboundary cooperation; 3. In the Joint Action Programme of the ICPDR, transboundary policy measures and projects have been identified to reduce transboundary pollution.	1. The harmonization of national standards and procedures will facilitate regional cooperation under the Danube River Protection Convention as well as control and monitoring of transboundary benefits of pollution and nutrient reduction; 2. The new EU WFD will be implemented in the whole DRB using river basin management as the most efficient approach; this calls for the cooperation of all Danube countries, the civil society and NGOs to develop joint mechanisms and structures at the ICPDR and the sub-regional level; 3. The implementation of the Joint Action Programme under the DRPC will be reinforced through transboundary cooperation, defining complementary actions to reach common goals of pollution reduction in Significant Impact Areas (SIA) and rehabilitation of ecosystems; particular benefits will be the reduction of nutrient load in the Black Sea and the rehabilitation of its ecosystems.	1. Reviews of the present situation and development of new concepts for improved and harmonized standards and procedures in all participating countries will facilitate joint monitoring of transboundary effects and control of pollution and nutrient reduction measures introduced in municipal, industrial and agricultural sectors; 2. Middle and lower Danube states will have defined their respective programme of cooperation for the implementation of the EU WFD and their participation in the development of River Basin Management Plans; 3. The first and second phase of the EU WFD will be implemented by the majority of the DRB countries and operational mechanisms and structures for the preparation of RBM plans will be put in place; 4. Concepts for common policies for sustainable use of land and natural resources, nature conservation and wetland restoration, developed in the frame of an Annex to the Convention, will facilitate the development of RBM plans; 5. Recommendations for improving the capacities for cooperation under the DRPC and improved linkages to International Financing Institutions will facilitate the implementation and enlargement of the Joint Action Plan and, consequently, a further reduction of pollution and nutrient loads affecting SIA in the DRB and the Black Sea.

Component	Benefits	Baseline	Alternative	Incremental
OBJECTIVE 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin	**Domestic**	1. National mechanisms for pollution control in transition countries are frequently not fully operational (lack of funds, outdated equipment etc.) 2. National allowable emissions and quality standards are not yet fully harmonized with EU standards and control mechanisms (laboratories) are insufficiently equipped; 3. In transition countries, national mechanisms for environmental impact assessment are weak and control mechanisms are often not operational (see recent accidental pollution in the Tisza and Siret River Basins).	1. National and transboundary mechanisms for pollution control will reach comparable standards in all Danube countries to assure reliable data and coherence of information; 2. National emission limits and water quality standards will be adapted to EU regulations and control mechanisms will be fully functional in all DRB countries; 3. Environmental impact assessment will be part of national regulations to assure efficient control of industrial, mining and transport activities and to introduce preventive measures.	1. National "Inter-ministerial Committees" will be created to assure implementation of new policies and legislation for nutrient reduction and pollution control. The development of concepts for environmental impact assessment and harmonized standards for emission control and water quality assessment will provide the base for further improvement of mechanisms for regional cooperation; 2. Concepts for the improvement of the accidental emergency system will facilitate efficient monitoring of accidental "hot spots" and prevention of accidental pollution from toxic substances from mining and industrial plants.
	Global-Regional	1. The ICPDR has put in place Expert Groups to develop common strategies and standards for pollution control (emissions), water quality control, accidental emergency warning, ecology and river basin management (implementation of EU WFD); 2. The Joint Danube–Black Sea ad-hoc working group has formulated common strategies to assure a reduction in nutrient load in the Black Sea with the objective to restore the Black Sea ecosystems; 3. The ICPDR has put in place an Information System (DANUBIS) to assure efficient exchange of information within the member states and Expert Groups and to provide information to the public.	1. To facilitate monitoring and evaluation of joint implementation of pollution reduction measures, the participating countries under the ICPDR will improve mechanisms for monitoring and evaluation and develop indicators to measure process, environmental status and stress reduction; 2. The Danube–Black Sea Joint Working Group will implement the commonly agreed strategies and actions, develop respective impact indicators and report the results regularly to both Commissions; 3. All Danube countries will use the ICPDR Information System (DANUBIS) as an interactive plat-form for the development and exchange of information and provide access to reliable data and information to the public.	1. Proposals for commonly agreed indicators to measure process, environmental status and stress reduction will facilitate joint monitoring and evaluation of the implementation of pollution reduction measures; 2. Increased technical and managerial know-ledge for transboundary cooperation and development of joint policies and actions through the preparation of programmes for training and capacity building; 3. The preparation of regular evaluation reports on water quality and nutrient loads/ concentrations in the TNMN Yearbooks and other relevant documents will facilitate cooperation and public information; 4. A working programme issued by the Joint Danube-Black Sea Working Group will result in regular reports on the status of the Black Sea ecosystems and is based on observation of commonly agreed indicators; 5. The existence of the ICPDR Information System will facilitate interactive internal monitoring and information exchange and provide information to the public.

Component	Benefits	Baseline	Alternative	Incremental
OBJECTIVE 3: Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems	**Domestic**	1. National NGOs have been actively participating in implementing GEF Small Grants projects and in conducting awareness raising campaigns for pollution reduction; 2. In Germany as well as in Austria and also in several Danube transition countries, national NGOs have established good working or influential relationships with governments at national and local level; 3. Government campaigns for awareness raising for pollution control and waste water management are relatively rare in transition countries (scarcity of funding); 4. Reports from mass media on National Planning Workshops, organized in the frame of the UNDP/GEF Pollution Reduction Programme in 1998/99, contributed to public awareness raising.	1. Community-based activities for pollution /nutrient reduction measures and wetlands restoration will be supported by the "Small Grants Programme" and implemented through NGOs involvement; 2. National NGOs will be strengthened to enable them to participate in national debates and public hearings on environ-mental issues with particular attention to pollution control, nutrient reduction and EIA; 3. National NGOs will organize and implement, in relation to "Small Grants Programmes" particular awareness raising campaigns for pollution control and nutrient reduction.	1. Community based actions and programmes for nutrient reduction and awareness raising are efficiently prepared for the financial support of the "Small Grants Programme", and aiming at the cooperation of national NGOs; 2. Efficient participation of NGOs in national debates and public hearings related to environmental protection and RBM is prepared through their involvement in the Small Grants Programme and in the organization of awareness raising campaigns; 3. Improved public awareness and response to nutrient reduction and pollution control is prepared through public campaigns and the implementation of actions and projects in the frame of the Small Grants Programme ("applied" awareness raising).
	Global-Regional	1. At the regional level, national NGOs are organized in the Danube Environmental Forum (DEF); DEF representatives participate in ICPDR meetings and in the RMB EG and ad-hoc ECO Expert Group; an internal information exchange by e-mail is functioning; 2. International NGOs, and WWF in particular, play an important role in wetland restoration and environmental awareness raising and participate in all emergency situations (Balkan Task Force, Baia Mare Task Force, etc.); 3. Under the Danube River Basin Environ-mental Programme, the periodical "Danube Watch" was published quarterly from 1994 to 2000 as a channel to inform the government and private readers about water pollution and related problems in the DRB and the progress made in implementing the programme in support of the DRPC.	1. The Danube Environmental Forum will be fully operational at the national and regional levels; the DEF will participate with qualified expertise in all ICPDR Expert Groups to assure the implementation of NGO strategies and actions in support of the DRPC; 2. The DEF has developed mechanisms to assure sustainable financial resources for its operation and activities; 3. Under the ICPDR, basin-wide awareness raising campaigns will be organized to enhance public participation in the implementation of the water framework and nitrate directives with particular attention to nutrient reduction measures and phosphorus phase-out programmes; 4. The Danube Watch will be used as a periodical information journal of the ICPDR.	1. The existence of operational mechanisms and structures for basin-wide coordination and development of NGO policies and actions under the DEF is achieved through operational and structural support; 2. Improved and efficient cooperation with the ICPDR is assured through NGOs participation in ICPDR bodies (observers); 3. Financial sustainability of the DEF is addressed through development of funding schemes and resource mobilization; 4. Increased awareness of the public and the decision makers of nutrient reduction and pollution control will be achieved through public awareness raising campaigns to be organized in Phase 2 of the Project in cooperation with the DEF and national NGOs and through special publications of the ICPDR.

Component	Benefits	Baseline	Alternative	Incremental
OBJECTIVE 4: Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances	**Domestic**	1. In transition countries, the analysis of sediments and monitoring of bio-indicators is only done occasionally; funding of institutions and laboratories is insufficient to conduct regular programmes; 2. Monitoring of nutrient-removal capacities of wetlands is only done in the frame of specific projects outside the DRB; no regular observation programme exists in the Danube countries.	1. Specialized institutions at the national level will be identified to participate in the sampling and analysis of bio-indicators and sediments to control toxic substances, heavy metals and other pollutants in national waters; 2. In the frame of the implementation of wetland rehabilitation projects, monitoring programmes will be set up to analyze the effects of nutrient reduction and to determine the most cost-effective solutions for wetland restoration in the DRB.	1. Preparation for improved performance of national institutions to execute sampling and analysis of environmental status indicators (with particular attention to bio-indicators) and sediments to control toxic substances, heavy metals and other pollutants in national waters; 2. Improved knowledge on toxic substances accumulated in sediments in the Danube River and its tributaries and on possible effects on the Black Sea; 3. Improved knowledge on the most cost-effective way of wetland restoration and nutrient removal in the DRB.
	Global-Regional	1. Upstream Danube countries, in particular Germany and Austria, have not yet fully adapted national legislation to EU water quality directives (Nitrate Directive) and have not yet established mechanisms for compliance whereas downstream countries have a good potential (but no funds!) to introduce cost-efficient nutrient reduction measures 2. Transboundary effects of pollutants in sediments (toxic substances and heavy metals) are not investigated; transport mechanisms of sediments and effects on the Black Sea ecosystems are presently not known.	1. EU countries, Germany and Austria are increasing their efforts to comply with EU Nitrate Directive in regard to diffuses sources of pollution, (in particular agricultural activities); in this context, economic measures will be examined to speed up nutrient reduction measures in the frame of joint actions under the ICPDR; 2. The ICPDR will set up a regular programme for the sampling and analysis of bio indicators and sediments to control transboundary flow of toxic substances, heavy metals and other pollutants as well as their effects on ecosystems in the DRB and the Black Sea.	1. Economic instruments are assessed and discussion with the EU is initiated to identify new or alternative ways for the implementation of nutrient reduction measures, including incentives and voluntary measures of basin wide cooperation; 2. Regular monitoring programmes are prepared to analyze the effects of nutrient reduction and to evaluate their effect on ecosystems in the DRB and the Black Sea.

Component	Benefits	Baseline	Alternative	Incremental
INVESTMENTS: **Five Year Nutrient Reduction Plan / ICPDR Joint Action Programme**	**Domestic**	Investments: 4.4 billion € for five years out of which 39% of funding is assured through national funding, 26 % through international loans and 15% through international grants; 20% of the proposed investment remains to be raised. Through the implementation of projects for waste water treatment in the municipal, industrial and agro-industrial sectors (ICPDR Joint Action Programme), important domestic benefits in pollution reduction (COD, BOD, N + P) are achieved also during the first from 2001 to 2003 covered by the 1st Phase of the GEF Project.	In the frame of the existing funding schemes, covering a period of 5 years, additional funds (850 million €) will be mobilized through: • World Bank Partnership : 210 million $ in loans and 70 million $ in GEF grants • ISPA funds : 3.5 billion € • SAPARD funds : 1.7 billion € • Other EU funds : 8.3 billion € • EBRD funds : to be determined • Bilateral funds : to be determined Considering that the economic situation of all transition countries will be improved over time, the 5-year investment programme can be amended and additional investments can be foreseen to further facilitate the implementation of pollution reduction measures. Particular attention will also be paid to nutrient reduction from non-point sources of pollution through the development and implementation of respective policies and legislation.	Through the implementation of the above-mentioned measures described in Phase 1 of the GEF Regional Project in terms of the assessing and improving policies and regulations for nutrient reduction in line with EU Directives (Urban Waste Water Directive, Nitrate Directive, WFD, etc.), additional benefits will be achieved in reducing emissions from point and non-point sources, in particular from agricultural activities. The 1st Phase of capacity building measures from 2001 to 2003 will reinforce the 5 years investment programme and will increase the effectiveness of measures for pollution reduction.
	Global-Regional	The implementation of the above measures will also yield transboundary and therefore regional benefits; concerning the reduction of nutrient transport to the Black Sea, global benefits will also be achieved.	All the projects described above and the measures implemented at the national level will have transboundary consequences in the improvement of health and ecological conditions in the Danube River Basin (Significant Impact Areas) and, through reduction of nutrient load, in the recovery of the Black Sea ecosystems.	The implementation of the above measures at the national level will also yield transboundary and therefore regional benefits in improving the ecological conditions in Significant Impact Areas of the DRB; concerning the reduction of nutrients from point and non-point sources, substantive global benefits will also be achieved for the Black Sea and the restoration of its ecosystems.

Danube Regional Project - Phase 1 / Incremental Costs Matrix - Costs

Objective	Outputs	Baseline Costs (USD)						Alternative Costs (USD)	Incremental Costs (USD)		
		Governments	UNDP	Bilat. Donors (USAID)	EU	NGOs	Total Baseline		ICPDR	GEF	Total Incremental
Objective 1: Creation of sustainable ecological conditions for land use and water management	General costs related to Objective 1			400,000			400,000	835,000		435,000	435,000
	1.1 Development and implementation of policy guidelines for river basin and water resources management.	22,320,000	150,000				22,470,000	24,105,600	1,188,000	447,600	1,635,600
	1.2 Reduction of nutrients and other harmful substances from agricultural non-point sources through agricultural policy changes	16,740,000					16,740,000	17,120,600		380,600	380,600
	1.3 Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point-sources	16,740,000	70,000				16,810,000	17,079,200		269,200	269,200
	1.4 Policy development for wetlands rehabilitation under the aspect of appropriate land use	9,300,000	80,000			80,000	9,460,000	9,706,400		246,400	246,400
	1.5 Industrial reform and development of policies and legislation for application of BAT (best available techniques including cleaner technologies) towards reduction of nutrient (N and P) and dangerous substances	13,950,000	265,000	2,000,000			16,215,000	16,484,600		269,600	269,600
	1.6 Policy reform and legislation measures for development of cost-covering concepts for water and waste water tariffs, focusing on nutrient reduction and control of dangerous substances	5,580,000	200,000	2,000,000			7,780,000	7,943,000		163,000	163,000
	1.7 Implementation of effective systems of water pollution charges, fines and incentives, focusing on nutrients and dangerous subst.	4,650,000	50,000				4,700,000	4,792,000		92,000	92,000
	1.8 Recommendations for the reduction of phosphorus in detergents	3,720,000	60,000				3,780,000	3,902,000		122,000	122,000
	Subtotal	93,000,000	875,000	4,400,000		80,000	98,355,000	101,968,400	1,188,000	2,425,400	3,613,400
Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin	General costs related to Objective 2			2,400,000			2,400,000	2,577,500		177,500	177,500
	2.1 Setting up of "Inter-ministerial Committees" for development, implementation and follow-up of national policies, legislation and projects for nutrient reduction and pollution control	3,720,000					3,720,000	3,939,500	181,500	38,000	219,500
	2.2 Development of operational tools for monitoring, laboratory and information management and for emission analysis from point and non-point sources of pollution with partic. attention to nutrients and toxic substances	22,320,000					22,320,000	23,587,720	1,089,000	178,720	1,267,720
	2.3 Improvement of procedures and tools for accidental emergency response with particular attention to transboundary emergency situations	15,624,000					15,624,000	16,467,460	762,300	81,160	843,460
	2.4 Support for reinforcement of ICPDR Information and Monitoring System (DANUBIS)	20,832,000					20,832,000	22,050,560	1,016,400	202,160	1,218,560
	2.5 Implementation of the "Memorandum of Understanding" between the ICPDR and the ICPBS relating to discharges of nutrients and hazardous substances to the Black Sea	4,464,000					4,464,000	4,709,400	217,800	27,600	245,400
	2.6 Training and consultation workshops for resource mamangement and pollution control with particular attention to nutrient reduction and transboundary issues	0			137,800,000		137,800,000	137,916,800	0	116,800	116,800
	Subtotal	74,400,000		2,400,000	137,800,000		207,160,000	219,051,940	3,630,000	821,940	4,088,940

Objective	Outputs	Baseline Costs (USD)						Alternative Costs (USD)	Incremental Costs (USD)		
		Governments	UNDP	Bilat. Donors (USAID)	EU	NGOs	Total Baseline		ICPDR	GEF	Total Incremental
Objective 3:Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems	General costs related to Objective 3			4,000,000		6,100,000	10,100,000	10,201,000		101,000	101,000
	3.1 Support for institutional development of NGOs and community involvement		70,000			2,500,000	2,570,000	2,988,520	143,220	275,300	418,520
	3.2 Applied awareness raising through community based "Small Grants Programme"		30,000	6,000,000		3,000,000	9,030,000	9,273,790	55,440	188,350	243,790
	3.3 Organization of public awareness raising campaigns on nutrient reduction and control of toxic substances		94,000			14,800	108,800	635,140	263,340	263,000	526,340
	Subtotal		194,000	10,000,000		11,614,800	21,808,800	23,098,450	462,000	827,650	1,289,650
Objective 4: Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances	General costs related to objective 4							122,750		122,750	122,750
	4.1 Development of indicators for project monitoring and impact evaluation	7,440,000					7,440,000	7,929,150	363,000	126,150	489,150
	4.2 Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other dangerous substances on the Danube and the Black Sea ecosystems	5,580,000					5,580,000	5,976,000	396,000	0	396,000
	4.3 Monitoring and assessment of nutrient removal capacities of riverine wetlands	7,440,000				80,000	7,520,000	8,157,340	528,000	109,340	637,340
	4.4 Danube Basin study on pollution trading and corresponding economic instruments for nutrient reduction	5,580,000					5,580,000	6,172,400	396,000	196,400	592,400
	Subtotal	18,600,000	0			80,000	18,680,000	20,554,640	1,320,000	554,640	2,237,640
Total Capacity Building		**186,000,000**	**1,069,000**	**16,800,000**	**137,800,000**	**11,774,800**	**353,443,800**	**364,673,430**	**6,600,000**	**4,629,630**	**11,229,630**
PDF-B										**350,000**	**350,000**
Support Costs										**370,370**	**370,370**
Total		**186,000,000**	**1,069,000**	**16,800,000**	**137,800,000**	**11,774,800**	**353,443,800**	**365,393,800**	**6,600,000**	**5,350,000**	**11,950,000**

Bilateral Donors: USAID, NGOs: REC, WWF, Danube NGOs
DEPA

ANNEX 2 Logical Frame Matrix (Objectives, Outputs, Activities)

Annex 2.1 Logical Frame Matrix – Project Phase 1

Logical Frame Matrix – Phase 1 (Objectives, Outputs, Activities)

Objectives/Purpose	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
1. Long-term Development Objective: **The long-term development objective of the proposed Regional Project is to contribute to sustainable human development in the DRB through reinforcing the capacities of the participating countries in developing effective mechanisms for regional cooperation and coordination in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.** **2. Overall Objective:** The overall objective of the Danube Regional Project is to complement the activities of the ICPDR required to provide a regional approach and global significance to the development of national policies and legislation and to the definition of priority actions for nutrient reduction and pollution control with particular attention to achieving sustainable transboundary ecological effects within the DRB and the Black Sea area. **The specific objective of Phase 1 of the Project** is to prepare and initiate basin-wide capacity-building activities with particular attention to creation of inter-ministerial committees, concept development for implementation of policies, legal and economic instruments, mechanisms for monitoring and evaluation and development of programmes for awareness raising and NGO strengthening.	**Overall Project Objective:** At the end of Phase 1 of the Project, methodologies and concepts have been developed under the DRPC to introduce and implement legal and institutional mechanisms for efficient pollution control and reduction of nutrient loads to the Black Sea.	• Project progress and evaluation report • Summary Reports on ICPDR meetings and resolutions • National reports on the process of implementation of legal and institutional instruments	• All countries participate under the ICPDR in implementing legal and institutional mechanisms for pollution reduction and sustainable water management.
	Objective 1: At the end of the Project Phase 1, all Danube River Basin countries have reviewed policies and legal instruments in relation to ecological land use (River Basin Management) and water management and have prepared mechanisms to adapt their national legislation to international and EU standards.	• Project progress and evaluation report • National reports on existing and proposed policies, legal instruments and measures for compliance.	• All countries participate under the ICPDR in the implementation of EU WFD and other Directives for pollution reduction.
	Objective 2: Operational mechanisms for the monitoring of water pollution and control of emissions from point and non-point sources and a reliable information system under the ICPDR are designed and ready for implementation at the regional and national level to assess improvement of water quality and nutrient reduction in the Black Sea.	• Working area of the ICPDR Information System showing concepts and design of monitoring systems for water quality, emissions and emergency warning; • Reports from the MLIM and EMIS Expert Groups	• National Experts are proactively participating in the implementation of the DRPC and Governments have provided sufficient funding for the operation of national Information System.

Objectives/Purpose	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
3. Purpose of the Project: Further, the Danube Regional Project shall facilitate project implementation by providing a framework for coordination, dissemination and replication of successful demonstration that will be developed through the implementation of investment projects.	**Objective 3:** At the end of Phase 1 of the Project the Secretariat of the Danube Environmental Forum (DEF) is fully operational and national representations exist in all Danube countries. National NGOs are involved in project preparation and have identified community-based nutrient reduction projects to be financed under the GEF Small Grants Programme and have prepared at least two national awareness-raising campaigns.	• Reports on staffing and operation of the DEF Secretariat • List of national NGOs adhering to the DEF and of National DEF Focal Points; • National lists of projects to be financed in the frame of the GEF Small Grants Programme.	• The DEF has the necessary personnel and commitment to play its role efficiently in the DRB.
	Objective 4: At the end of Phase 1 of the Project, the ICPDR has conceptualized and developed its monitoring and evaluation system and has identified the indicators for pollution reduction and environmental status; knowledge on removal of nutrients and toxic substances is increased and economic instruments to encourage investments for nutrient reduction are developed at the national and regional level.	• Concept of M&E system indicators (process stress, status) developed and accessible in DANUBIS working area; • Report on methodological approach and programmes to assess nutrient-retention capacities of wetlands; • Report on economic instruments to facilitate investments in nutrient reduction projects.	• Cooperation of all countries and organizations, in particular the EU, in the development and application of indicators for project monitoring and evaluation.

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.1: Development and implementation of policy guidelines for river basin and water resources management	1. River Basin Districts are defined 2. River basin management practices are identified and gaps and needs in relation of WFD requirements are clarified 3. Methodology for preparation of RBD management plans is implemented in pilot river basins 4. Transboundary cooperation and coordination is enhanced	1. Map with Danube RBD boundaries 2. Report on concepts for river basin management plans 3. Pilot River Basins identified 4. Reports on regular meetings of the ICPDR River Basin Management Expert Group	1. Differing concepts on the sub-river basins delimitation might appear 2. Limited capacities for implementation of WFD of downstream countries 3. Financial support for preparation of pilot projects is assured
1.1.1 Identification of the River Basin Districts (RBD), in particular the assignment of coastal waters and groundwater bodies; 1.1.2 Developing common approaches and methodologies for pressure and impact analysis; 1.1.3 Implementing the common approaches and methodologies for pressure and impact analysis (at the national level); 1.1.4 Applying the EU Guidelines for economic analysis and arriving at the overall economic analysis for the Danube River Basin; 1.1.5 Developing RBM tools (mapping, GIS, remote sensing, etc.) and related data management, including the arriving at the typology of surface waters and the relevant reference conditions; 1.1.6 Identify pilot river basins and apply common approaches, methodologies, standards and guidelines (observe also the link to the Working Groups of the European Commission); 1.1.7 Organize workshops and training courses in order to produce the River Basin Management Plan and to strengthen basin-wide cooperation; 1.1.8 *(to be carried out in the Phase 2);* 1.1.9 *(to be carried out in the Phase 2).*			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.2: Reduction of nutrients and other harmful substances from agricultural point and non-point sources through agricultural policy changes	1. List of priority 'hot spots' and assessment of legislation on point and non-point sources of pollution are updated 2. Review of hazardous agrochemicals and their impacts is worked out 3. Conventional and alternative agricultural practices and farming in line with EU requirements for central and downstream Danube countries are analyzed 4. National deficiencies in agricultural policy are identified	1. National analysis reports for each DRB country 2. DRB report on the use and impact of agrochemicals 3. Draft concepts for strengthening best agricultural practices in DRB countries	1. Cooperation of national level needs and production of national reports must be available in time 2. Economic conditions are unfavorable for adoption of new appropriate agricultural practices and organic farming
1.2.1 Up-dating the basin-wide inventory and prioritization on agricultural point and non-point sources of pollution "hot spots" in line with EMIS emission inventory; 1.2.2 Review relevant legislation, existing policy programmes and actual state of enforcement in the DRB with respect to promotion and application of best agricultural practices; 1.2.3 Review inventory on important agrochemicals (nutrients etc.) in terms of quantities of utilization, their misuse in application, their environmental impacts and potential for reduction; 1.2.4 Identify main institutional, administrative and funding deficiencies (incl. complementary measures) to reduce pollutants; 1.2.5 Introduce or, where existing, further develop concepts for the application of best agricultural practices in all DRB countries, by taking into account country-specific traditional, social and economic issues, and the ECE recommendations; 1.2.6 *(to be carried out in the Phase 2).*			
Output 1.3: Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point and non-point sources	1. Assessment of practical promotion of best agricultural practices and manure handling is updated 2. Alternative concepts for farming and manure handling in line with EU requirements for central and downstream Danube countries are elaborated 3. Needs for pilot activities in best agricultural practices are identified in UA, MO, RO, BG, YU and B-H 4. Understanding of decision makers and farmers on the need to introduce new concepts for animal farming and manure handling is addressed	1. Identification list for pilot projects in best agricultural practices 3. Concepts for introduction of best agricultural practices	1. Cooperation of stakeholders and difficulty to identify community interest, 2. Knowledge is needed to inform farm managers and policy makers on the trade-off between on-farm practices and off-farm consequences 3. Controversy on the economic and financial viability of selected pilot farms may occur
1.3.1 Analyze existing programmes and pilot projects promoting best agricultural practice (especially regarding animal farming and manure handling, as well as organic farming) in DRB countries, and assess nutrient reduction capacities; 1.3.2 Develop practical concepts for the introduction resp. better promotion of appropriate agricultural practices and manure handling in the central and downstream DRB countries by taking into account national demand and international markets and ECE recommendations; 1.3.3 Prepare and implement for the central and lower DRB countries typical pilot projects (especially in UA, MD, RO, BG, YU and B-H) to train and support farmers in the application of best agricultural practice. 1.3.4 *(to be carried out in the Phase 2)*			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.4: Policy development for wetlands rehabilitation under the aspect of appropriate land use	1. Areas for land use planning in pilot river basins are identified 2. Methodology and concepts for appropriate land use and wetland restoration are developed 3. Inappropriate land use at wetland restoration is discussed with stakeholders (workshop)	1. Draft reports on land use in two sub-river basin areas 2. New concepts and strategies for land use reforms of selected wetland areas (wetland rehabilitation schemes)	1. Limited knowledge on economic and environmental benefits and costs of various land uses 2. Difficulty to assure participatory approach and cooperation between environmentalists and government
1.4.1 Define methodology for integrated land use assessment around wetlands (called "wetland areas"); 1.4.2 Carry out case studies for selected wetland areas and assess inappropriate land use (e.g. forestry, settlements and development zones, agriculture and hydraulic structures); 1.4.3 Develop alternative concepts and strategies for achieving integrated land use and management in chosen wetland areas, including required actions and measures (regulatory and legal issues, economic fines and incentives, compensation payments, etc). 1.4.4 *(to be carried out in the Phase 2)* 1.4.5 *(to be carried out in the Phase 2)*			
Output 1.5: Industrial reform and development of policies and legislation for application of BAT (best available techniques including cleaner technologies) towards reduction of nutrients (N and P) and dangerous substances	1. Updated list of 'hot spots' and inventory on industries with outdated techniques and facilities (accidental risks), related to SIAs, are produced 2. Existing policies and legislation at the national level are collected and existing gaps with EU legislation are identified 3. Workshop programmes for BAT introduction are prepared	1.+2. National reports on inventory of industrial technologies and legal status 3. Training programmes and training materials	1. Difficulty to access most recent database 3. Industrial managers, researchers and policy makers have to perceive the benefits of implementing EU environmental directives
1.5.1 Up-dating the basin-wide inventory on industrial and mining "hot spots" (EMIS inventory) taking into account emissions of nutrient and toxic substances 1.5.2 Review data and information on the actual status of industrial production techniques involving nutrients (N and P) and dangerous substances in the DRB countries. 1.5.3 Review policies and relevant existing and future legislation for industrial pollution control and identification enforcement mechanisms on a country level; 1.5.4 Compare and identify gaps between relevant EU and national legislation; 1.5.5 Develop necessary complementing policy and legal measures for the introduction of BAT (regulatory and legal issues, awareness raising, financial fines and incentives, etc); 1.5.6 Identify in relation to Significant Impact Areas, industries having a significant impact on water resources and water quality; 1.5.7 *(to be carried out in the Phase 2)* 1.5.8 Organize workshops with participants from relevant ministries, industrial managers, banking institutions, introducing information on best available technologies, financial support, etc..			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.6: Policy reform and legislation measures for the development of cost-covering concepts for water and waste water tariffs, focusing on nutrient reduction and control of dangerous substances	1. Deficiencies in international comparison related to tariffs, metering, types of collection etc. are identified 2. Most appropriate cost recovery models and gradual tariffs reform are proposed for specific countries	1. Comparative tariff study 2. Policies and recommendations on cost recovery models for Danube countries	1. Information accessibility in the various DRB countries 2. Political and administrative constraints
1.6.1 Analyze significant differences /deficiencies regarding water sector relevant legislation, level of tariffs, status of metering, level of illegal and unaccounted for consumptions, collection rate, etc.; assess the potential for the increase of revenues of the companies operating in the water and waste water sector; 1.6.2 Develop appropriate concepts for tariff reforms aimed at cost covering models in line with the EU WFD (on a country level); 1.6.3 *(to be carried out in the Phase 2);* 1.6.4 *(to be carried out in the Phase 2)*			
Output 1.7: Implementation of effective systems of water pollution charges, fines and incentives, focusing on nutrients and dangerous substances	1. Present systems of charges, fines and incentives is analyzed nationally and DRB-wide. 2. Alternative concepts for the introduction of incentive-based instruments for groups of DRB countries are identified 3. Institutional, economic and social capabilities to implement economic instruments are assessed	1. National and regional reports. 2. Proposals for incentives for specific stakeholder/user groups in DRB countries 3. Recommendations on strengthening of institutional mechanisms for exacting compliance	1. Low government willingness to introduce economic incentives 2. Lack of commitment of economic authorities to introduce incentives 3. Limited knowledge on costs and benefits of incentives schemes
1.7.1 Analyze the present systems of water pollution charges, fines and incentives in the DRB countries and identify significant deficiencies (types and basis of charges, fines and incentives, effectiveness, collection procedures, exemptions, etc). 1.7.2 Identify the most essential and effective water pollution charges, fines and incentives, assess the main obstacles/barriers to their introduction and develop enforcement mechanisms; 1.7.3 Assess the institutional and economic capabilities of the particular DRB countries for a reform of water pollution charges, fines and incentives; 1.7.4 *(to be carried out in the Phase 2);* 1.7.5 *(to be carried out in the Phase 2).*			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.8: Recommendations for the reduction of phosphorus in detergents	1. Analysis of legal and institutional possibilities for introducing restrictive standards for detergents use in particular DRB countries is performed 2. Proposals of severe standards and implementation schedule for phosphorus reduction are developed 3. Proposals for enforcement and compliance are elaborated 4. Organization of workshops on phase out of phosphorus in detergents	1. National statistics on P-based detergents 2. Draft standards and phase-out plans for phosphorus detergents 3. Proposals for economic and financial rules 4. Workshop reports	1. Low priority concern for introducing detergents standard at governmental level 3. Weak governmental support for producers of detergents
1.8.1 Review the existing legislation, policies and voluntary commitments; 1.8.2 Develop recommendations for phosphorus reduction in detergents in line with EU regulations and commonly agreed international standards; 1.8.3 Develop proposals for enforcement and compliance (economic, financial incentives); 1.8.4 Organize a basin-wide workshop dealing with the implementation of recommendations at national level; 1.8.5 *(to be carried out in the Phase 2)*			

Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 2.1: Setting up of "Inter-ministerial Committees" for development, implementation and follow-up of national policies legislation and projects for nutrient reduction and pollution control	1. Existing structures and mechanisms for implementation of environmental policies and legislation analyzed 2. Adequate structures proposed in cooperation with relevant ministerial departments 3. Inter-ministerial Committees established	1. Analysis report 2. Proposal of structural chart and description of mandate 3. Reports from meetings of the committees	1. Reluctance from certain Governments to create the Inter-ministerial Committees 2. Missing cooperation among ministries concerned
2.1.1 Evaluate existing national structures for coordination of water management and water pollution control (follow up action on report on "Existing and planned inter-ministerial coordination mechanisms relating to pollution control and nutrient reduction", August 2000) 2.1.2 In cooperation with national governments, propose adequate structures, including technical, administrative and financial departments to coordinate the review and implementation of policies, legislation and projects for nutrient reduction and pollution control 2.1.3 Assist Governments in setting up national "Inter-ministerial Committees" and provide initial guidance for the implementation of GEF project components			
Output 2.2: Development of operational tools for monitoring, laboratory and information management and for emission analysis from point and non-point sources of pollution with particular attention to nutrients and toxic substances	1. Water quality objectives and nutrient and toxics quality conditions are developed 2. Statistics of emissions from point and non-point sources for P and N are existing 3. Inventory of priority chemicals in line with EU is prepared 4. Laboratory equipment in selected countries is reinforced 5. Information system and network are improved	1. Report and map on standards and river classification 2. List of N, P emissions from point and non-point sources 3. Statistics of priority chemicals 4. Laboratories of TMNM in selected countries 5. Transmission reports	1. Criteria for harmonization agreed 2. - 4. All national data are available and comparable at regional scale 3. Need for participatory approach
2.2.1 Harmonize water quality standards and quality assurance for nutrients and toxic substances; 2.2.2 Assist in the creation of database and emission inventory for point and non-point sources of phosphorus and nitrogen, including maps, 2.2.3 Optimize TNMN and identify sources and amounts of transboundary pollution of substances on the list of EU priority substances.			

Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 2.3: Improvement of procedures and tools for accidental emergency response with particular attention to transboundary emergency situations	1. National stations - PIACs for MD, UA, BiH, YU are planned and programme for implementation prepared 2. Inventory and assessment of high accidental risks spots are produced in all countries 3. DBAM is prepared for improvement to respond to pollution transport issues	1. Implementation programme for PIAC extension 2. National inventories of accidental risk spots 3. Proposal for calibration and operation of DBAM	1. Low priority for accidental pollution issues in the ministries 2. Delays in regulatory decisions 3. Financial and material resources secured 4. Countries need to receive information and assessment in developing new management skills
2.3.1 Reinforce operational conditions in the national AEPWS alert centers (PIACs) and geographical extension in Bosnia-Herzegovina and the FR of Yugoslavia; 2.3.2 Complete the inventory presently available only for the upper Tisza river basin, and evaluate all high -accident-risk spots in all countries in the Danube River Basin, in line with EU legislation and considering that similar "hot spot" industrial activities exist in many transition countries [8]), 2.3.3 Design preventive measures, adjust national legislation and improve compliance with safety standards, 2.3.4 Maintenance and calibration of the Danube Basin Alarm Model (DBAM), to predict the propagation of the accidental pollution and evaluate temporal, spatial and magnitude characteristics in the Danube river system and to the Black Sea; 2.3.5 *(to be carried out in the Phase 2)*			
Output 2.4: Support for reinforcement of ICPDR Information and Monitoring System (DANUBIS)	1. ICPDR Information System is fully operational with internal working area and public accessible area 2. Networking within DANUBIS by all ICPDR contracting parties is developing 3. Interactive DANUBIS web site is developing 4. Mechanisms for many users of having access to information are available	1. DANUBIS web site 2. + 3. Information exchange between Expert Groups and in emergency situations 3. Rules of accessions rights to DANUBIS	1. Low commitment and limited resources of governments to link to DANUBIS 2. Inadequate user skills 3. Countries must undertake interactions to facilitate transboundary communication
2.4.1 Fully develop ICPDR Information System and ensure that it is used by its expert groups and other operational bodies; 2.4.2 Link all Contracting Parties of the ICPDR and other participating countries to DANUBIS, which implies the development and implementation of national linkages and the establishment of operational units to communicate also in case of accidental emergency situations; 2.4.3 Reinforce DANUBIS through the implementation of an interactive web-site to integrate further textual, numerical and digital mapping information and to fulfil all requirements of the work of the nutrient reduction programme (communication, monitoring, public information, etc.); 2.4.4 Launch an extensive training programme and organize a series of workshops at different user levels and in different regions of the Danube River Basin in order to train and assist future users in the best use of the tools made available by the system.			

[8] The F.R. of Yugoslavia is situated in an extreme important geographical position in the center of the Danube River Basin where the most important tributaries, Tisza, Sava and Drava are joining the Danube. During the recent accidental pollution the AEWS has also informed Yugoslavia and cooperated with its technical staff to monitor the effects of accidental pollution. The UNEP Balkan Task Force and the EU-Baia Mare Task Force have closely cooperated with Yugoslavian authorities in the assessment of accidental pollution and the design of emergency measures.

Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin

Output / Activity	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 2.5: Implementation of the "Memorandum of Understanding" between the ICPDR and the ICPBS relating to discharges of nutrients and hazardous substances to the Black Sea	1. Joint work programme for MoU is approved 2. Agreement of status indicators is reached 3. Rules of reporting are developed 4. Agreement on regular meetings is concluded 5. MoU is signed	1. Joint work programme 2. - 4. Agreements on the indicators and reporting rules 5. MoU document	1. Unequal involvement of ICPDR and ICPBS 2. Delayed national contributions to the implementation of the MoU
2.5.1 Develop joint work programme for MOU implementation 2.5.2 Define and agree on status indicators to monitor nutrient transport from the Danube and change of ecosystems in the Black Sea; 2.5.3 Define and establish reporting procedures; 2.5.4 Re-establish and organize regular meeting of the Joint Danube - Black Sea Working Groups to evaluate progress of nutrient reduction and recovery of Black Sea ecosystems; 2.5.5 Organize joint Danube - Black Sea meeting to approve and sign MoU			
Output 2.6: Training and consultation workshops for resource management and pollution control with particular attention to nutrient reduction and transboundary issues	1. Training needs are assessed, training programmes and course materials are developed 2. Sub-contractors and organizations for training courses are identified and contracts are prepared	1. Training programmes and course materials 2. List of subcontractors and conditions for organization of training courses	1. Difficulty to identify appropriate training consultants, 2. Lack of participation, differences in competence of participants, absence of certain DRB countries in training workshops
Training courses in the following fields: 2.6.1 Develop policy and legal frame for transboundary cooperation in nutrient reduction and control of toxic substances (in the context of bilateral and multilateral agreements); 2.6.2 Bring technical and legal issues of river basin planning and transboundary water resources management in line with the new EU Water Framework Directive with a view to ensuring effective nutrient reduction; 2.6.3 Technical and legal issues (land reclamation) of wetland restoration and management to assure nutrient removal; 2.6.4 Innovative technologies for municipal and industrial waste water collection, treatment; use of sewage and animal waste as fertilizer to reduce nutrient emissions; 2.6.5 Technical and legal issues of management and control of use of agrochemicals and manure; 2.6.6 Prepare documents for nutrient reduction projects with international co-funding and application of GEF criteria concerning "incremental cost" calculation; 2.6.7 Training courses for NGO activities.			

Objective 3: Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 3.1: Support for institutional development of NGOs and community involvement	1. Optimal operation of DEF secretariat is achieved 2. Training needs identified and programmes on environmental issues developed 3. Publications and materials for awareness raising on nutrient and toxics are conceptualized and prepared 4. Training courses and materials to reinforce NGO cooperation are prepared	1. Rules of operation of the DEF secretariat and recruitment of professional staff 2. Training programme 3. List of materials to be published 4. Training course materials	1. Lack of adequately trained professional staff 2. Professional knowledge of NGOs in pollution issues 4. Low willingness of governments to collaborate with NGOs, resp. of NGOs with governments
3.1.1 Support for the DEF Secretariat for operation, communication and information management; 3.1.2 Organization of consultation meetings and training workshops on nutrients and toxics issues; 3.1.3 Editing of special NGO publications in national languages on nutrients and toxic substances; 3.1.4 Organization of training courses for development of NGO activities and cooperation in national projects.			
Output 3.2: Applied awareness raising through community based “Small Grants Programme”	1. Conditions and implementation mechanisms for Small Grants Programme prepared and disseminated (topics, criteria, timing) 2. Calls for a regional and two local grants programmes	1. Small Grants Programme approved to start 2. NGO applications submitted to Grants Programme administrator	1. Correct acknowledgement of the SGP ensured 2. Clear and fair conditions for all NGOs
3.2.1 Identification of NGO grants programme and projects for reduction of nutrients and toxic substances and mitigation of transboundary pollution; 3.2.2 Design and implementation of region-wide granting programme focusing on demonstration activities and awareness campaigns for sustainable land management and pollution reduction (nutrients) in the agricultural, industrial and municipal sectors; 3.2.3 Design and implement two granting programmes at the local and national level in terms of small scale community based investment projects for pollution control, rehabilitation of wetlands, best agricultural practices, reduction of use of fertilizers, manure management, improvement of village sewer systems, etc.			
Output 3.3: Organization of public awareness raising campaigns on nutrient reduction and control of toxic substances	1. Realistic approach on organizing public campaigns is developed 2. Sufficient and reliable information for mass media purposes are prepared and published 3. Basin-wide documents are periodically published	1. Campaigns concept 2. Mechanisms of having access to information 3. Printed materials disseminated	1. Willingness of local administration to support organization of public events; 2. Campaign subject bears local conflicts with polluter 3. Information access restricted 4. Limited funds
3.3.1 Conceptualization and implementation of public awareness raising campaigns on nutrient-related issues in all DRB countries, national projects awarded through grants; 3.3.2 Development and production of materials for public press and mass media on nutrients and toxics; 3.3.3 Support publication of scientific documents and regular papers or special issues on water management and pollution reduction with particular attention to nutrient issues and Black Sea recovery.			

Objective 4: Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances			
Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 4.1: Development of indicators for project monitoring and impact evaluation	1. Monitoring and evaluation system for project implementation is developed 2. Indicators for emissions and water quality are reviewed to respond to nutrient concerns 3. Progress indicators for monitoring project implementation are developed 4. Impact indicators to evaluate environmental effects are defined 5. Environmental status indicators are developed	1. Description for monitoring and evaluation procedures 2. Description of environmental status (water quality) and stress reduction (emission) indicators 3. - 5. List of progress, impact and environmental status indicators	1. Cooperation with all Expert Groups and introduction of EU environmental parameters necessary 2. -5. Countries need to agree with selected indicators
4.1.1 Establishing a system for M&E in using specific indicators for process (legal and institutional frame), stress reduction (emissions, removal of hot spots) and environmental status (water quality, recovery of ecosystems) to demonstrate results of programme and project implementation and to evaluate environmental effects of implementation of policies and regulations (nutrient reduction); 4.1.2 Reviewing in the frame of the ICPDR Trans National Monitoring Programme (TNMN) specific indicators (e.g. bio-indicators) for emission control and water quality monitoring with particular attention to nutrients and toxic substances*;* 4.1.3 Establishing monitoring system in using specific progress indicators (benchmarks) for project implementation (GEF- Nutrient reduction projects activities); 4.1.4 Implementing ecological status assessment in line with requirements of EU WFD using specific bio-indicators to demonstrate effects of pollution /nutrient reduction in water-bodies and ecosystems; 4.1.5 *(to be carried out in the Phase 2)*			
Output 4.2: Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other dangerous substances on the Danube and the Black Sea ecosystems	***Carried out only in the 2nd Phase of the Project!***		

Objective 4: Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances

Output / Activity	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 4.3: Monitoring and assessment of nutrient removal capacities of riverine wetlands	1. Criteria for wetlands classification and observation priorities are defined 2. Methodological approach for assessment of nutrient removal capacities is developed taking into account results of other projects 3. Observation programme to assess annual removal capacities is designed and approved	1. List of criteria and results of case studies for various types of wetland 2. Report on methodological approach 3. Observation programme	1. Lack of understanding on the need to restore wetlands for pollution reduction 2. Differences in methodology for correlation and interpretation of results of linked projects 3. Limited information on scientific and economic conditions for nutrient removal capacities in wetlands.
4.3.1 Classify the wetlands and floodplains in the DRB by category and define potential observation sites; 4.3.2 Define the methodological approach for assessment of nutrient removal capacities of wetlands and flood plains; 4.3.3 *(to be carried out in the Phase 2)*; 4.3.4 *(to be carried out in the Phase 2)*; 4.3.5 *(to be carried out in the Phase 2)*; 4.3.6 *(to be carried out in the Phase 2)*; 4.3.7 *(to be carried out in the Phase 2).*			
Output 4.4: Danube Basin study on pollution trading and corresponding economic instruments for nutrient reduction	1. Economic instruments for nutrient reduction analyzed elaborated 2. Assessment on legal and policy issues related to economic instruments in DRB countries 3. Needs and barriers for “pollution trading” studied	1. Analytical report on economic instruments in DRB countries and world-wide experience 2.+3.Report on legal and policy instruments for nutrient trading	1. “Pollution trading” is for some contracting parties (EU) not an option to be considered; 2. Financial constraints for some Government to implement economic instruments 3. Tradable permits must be carefully adapted to economic and social condition of the countries and regions
4.4.1 Review existing concepts of successful “pollutant trading / auctions” or corresponding economic instruments in the water and air pollution sector in the US, Australia and Europe; 4.4.2 Study the general possibilities to establish the idea of "pollution trading" or corresponding economic instruments for nutrient reduction under the EU policies and directives in the Danube River Basin; 4.4.3 Assess the main problems / obstacles for "pollution trading" and corresponding economic instruments in the DRB and the interest of the particular DRB countries for implementation; 4.4.4 *(to be carried out in the Phase 2).*			

ANNEX 2 Logical Frame Matrix (Objectives, Outputs, Activities)

Annex 2.2 Logical Frame Matrix – Project Phase 2

Logical Frame Matrix - Phase 2 (Objectives, Outputs, Activities)

Objectives/Purpose	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
1. Long-term development Objective: **The long-term development objective of the proposed Regional Project is to contribute to sustainable human development in the DRB through reinforcing the capacities of the participating countries in developing effective mechanisms for regional cooperation and coordination in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.** **2. Overall Objective:** The overall objective of the Danube Regional Project with its Phase 1 and Phase 2 is to complement the activities of the ICPDR required to provide a regional approach and global significance to the development of national policies and legislation and the definition of priority actions for nutrient reduction and pollution control with particular attention to achieving sustainable transboundary ecological effects within the DRB and the Black Sea area. **The specific objective of Phase 2 of the Project** is to set up institutional and legal instruments to assure nutrient reduction and sustainable management of water bodies and ecological resources. To do this, the project has to build up on the results of Phase 1.	**Overall Project Objective:** At the end of Phase 2 of the Project, nutrient loads to the Black Sea are considerably reduced by 21.1 % for nitrogen and 32.0 % for phosphorus,	• Reports of Joint Danube/ Black Sea Working Group, in 2005; • TNMN Annual Reports.	• The Danube/Black Sea Joint Working Group is operational.
	Objective 1 : At the end of the Project Phase 2, all Danube River Basin countries have developed and ratified policies and legal instruments for sustainable water management and nutrient reduction and have put in place mechanisms for exacting compliance.	• EU Water Framework Directive applied in the frame of RBM Plans; • National policies and legislation in line with EU Directives; • Institutional and legal mechanisms for exacting compliance	• All countries participate in the development of new legal and institutional instruments
	Objective 2: Institutional and organizational mechanisms for transboundary cooperation and improved water quality monitoring, emission control emergency warning, accidental prevention and information management are fully operational at the regional and national level to assess improvement of water quality and nutrient reduction to the Black Sea.	• Working reports of Inter-ministerial Committees for nutrient reduction and pollution control; • Regular publication of TNMN annual reports; • Up-dated emission inventories and list of priority pollutants; • Operational accidental warning system and prevention (accidental risk inventory) • Progress reports from the Danube-Black Sea Joint Working Group.	• National Governments continue providing sufficient funding for monitoring and evaluation operation of national Information Systems.

Objectives/Purpose	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
3. Purpose of the Project: Further, the Danube Regional Project (Phase 1 and Phase 2) shall facilitate project implementation in providing a framework for coordination, dissemination and replication of successful demonstration that will be developed through the implementation of investment projects.	**Objective 3:** The civil society and in particular national NGOs in all Danube countries are at the end of the Project proactively implicated in national nutrient reduction programmes, have organized workshops and produced in national language information material for awareness raising campaigns and have successfully implemented community based nutrient reduction projects financed under the GEF Small Grants Programme.	• Fully operational and self-sustained DEF Secretariat; • List of NGOs in all Danube countries and their activity reports and results of nutrient reduction • Fully implemented GEF Small Grants Programme with 80 % of all projects showing sustainable results	• The DEF has the personnel and has mobilized financial support to play its role efficiently in the DRB
	Objective 4: Knowledge on sedimentation, transport and removal of nutrients and toxic substances is considerably increased and economic instruments to encourage investments for nutrient reduction are accepted and implemented at the national and regional level.	• Projects/measures to reduce toxic substances in the Iron Gate reservoirs; • Reports on quantified nutrient retention capacities of DRB wetland; • Endorsed wetlands management programmes; • Economic instruments to facilitate investments in nutrient reduction projects.	• Cooperation of all countries and organizations, in particular the EU, in defining economic instruments

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.1: Development and implementation of policy guidelines for river basin and water resources management	1. National reports on environmental characteristics and economic analysis in line with EU WFD existing; 2. River basin management practices and gaps in relation of WFD requirements identified 3. GIS and related data base for RBM Planning 4. Pilot River Basin Plans in line with EU WFD 5. Appropriate structures for transboundary cooperation such as river basin committees are created and operational	1. National reports and analytical summary reports 2. GIS system and maps showing typology of surface waters and groundwater bodies 3. RBM Plans for pilot river basins 4. Guidelines for compliance with EU directives	1. Differing concepts on the sub-river basins delimitation might appear 2. Limited capacities for participation in workshops and for implementation of WFD in downstream countries
1.1.1 *(accomplished in the Phase 1)*			
1.1.2 *(accomplished in the Phase 1)*			
1.1.3 Implementing the common approaches and methodologies for pressure and impact analysis (at the national level);			
1.1.4 Applying the EU Guidelines for economic analysis and arrive at the overall economic analysis for the Danube River Basin;			
1.1.5 Synthesize the results of the national analyses on environmental characteristics, evaluate the observed deficiencies in national reports and suggest ways to overcome them;			
1.1.6 Developing RBM tools (mapping, GIS, remote sensing, etc.) and related data management, including the arriving at the typology of surface waters and the relevant reference conditions;			
1.1.7 Identify pilot river basins and apply common approaches, methodologies, standards and guidelines (observe also the link to the Working Groups of the European Commission);			
1.1.8 Assist Danube River Basin countries in developing strategies to come in compliance with the EU WFD, and in particular the EU Nitrate Directive, in preparing the programme of measures;			
1.1.9 Organize workshops and training courses in order to produce the River Basin Management Plan and to strengthen basin-wide cooperation.			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.2: Reduction of nutrients and other harmful substances from agricultural point and non-point sources through agricultural policy changes	1. Concepts for best agricultural practices in line with EU requirements for central and downstream Danube countries are elaborated and discussed in workshops 2. National experts are trained to introduce best agricultural practices in their countries 3. Internet information on the introduction of best agricultural practices in each DRB country	1. Recommendations for application of best agricultural practices for each DRB country 2. Workshop Report 3. Internet address	1. Information need to be available 2. Policy makers discourage the adoption of best agricultural practices 3. Limited internet access in some DRB countries
1.2.1 *(accomplished in the Phase 1)* 1.2.2 Review relevant legislation, existing policy programmes and actual state of enforcement in the DRB with respect to promotion and application of best agricultural practices; 1.2.3 Review inventory on important agrochemicals (nutrients etc.) in terms of quantities of utilization, their misuse in application, their environmental impacts and potential for reduction; 1.2.4 *(accomplished in the Phase 1)* 1.2.5 Introduce or, where existing, further develop concepts for the application of best agricultural practices in all DRB countries, by taking into account country-specific traditional, social and economic issues, and the ECE recommendations; 1.2.6 Discuss the new concepts with and disseminate results to governments, farming communities and NGOs in the basin.			
Output 1.3: Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point and non-point sources	1. Pilot projects (related to identified priority "hot spots") on practical farm training and institutional support to expand best agricultural practices are carried out. 2. New institutions (networks) on eco-farming are initiated resp. strengthened 3. Pilot project monitoring and progress evaluation regarding financial implications is performed 4. Demonstration workshops assessing practical experiences in pilot projects conducted	1. Pilot project reports for six DRB countries 2. New farming network addresses 3. Better agricultural practices and manure handling (less input of agro-chemicals, less nutrient emissions) 4. Number of pilot projects, trained farmers and farming experts	1. Technical feasibility at pilot sites 2. Conflict with existing farm networks 3. Knowledge needed to inform farm managers and policy makers on the trade-off between on-farm practices and off-farm consequences 4. Controversy on the economic and financial viability of selected pilot farms may occur
1.3.1 *(accomplished in the Phase 1)* 1.3.2 *(accomplished in the Phase 1)* 1.3.3 Prepare and implement for the central and lower DRB countries typical pilot projects (especially in UA, MD, RO, BG, YU and B-H) to train and support farmers in the application of best agricultural practice; 1.3.4 Disseminate the results of the pilot projects.			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.4: Policy development for wetlands rehabilitation under the aspect of appropriate land use	1. Three concepts for land use reforms of selected wetland are discussed with stakeholders (proposal: Morava, Drava, Tisza) 2. New concepts for wetland areas are endorsed by governments (legal and institutional reform for integration of environmental and economic issues is prepared) 3. DRB workshop on project results and conclusions	1. Three new land-use concepts for wetland areas 2. Policy and legal commitment for land use reform around wetlands 3. New wetland projects in preparation or under implementation	1. Need for interdisciplinary problem solving research system 2. Disinterest of authorities for commitment; lack of financial resources
1.4.1 *(accomplished in the Phase 1)* 1.4.2 *(accomplished in the Phase 1)* 1.4.3 Develop alternative concepts and strategies for achieving integrated land use and management in chosen wetland areas, including required actions and measures (regulatory and legal issues, economic fines and incentives, compensation payments, etc); 1.4.4 Secure governmental commitments to implement the newly proposed integrated land use for selected wetland areas; 1.4.5 Disseminate project results in the Danube river basin.			
Output 1.5: Industrial reform and development of policies and legislation for application of BAT (best available techniques including cleaner technologies) towards reduction of nutrients (N and P) and dangerous substances	1. Annually updated assessment of the progress in existing legislative and enforcement status is elaborated 2. DRB countries have adapted national legislation in line with the EU 3. Measures for nutrient reduction in relation to SIA and industrial "hot spots" are implemented 4. Case studies on environmentally friendly production technologies in industries in particular countries are performed 5. Knowledge and understanding on the benefits and costs of various alternative concepts are improved	1. Annual reports on existing legal status 2. Statistics of compliance schedule and enforcement actions taken by industries 3. Guides to pollution reduction for different industries 4. Case studies on application of alternative concepts 5. Number of trained industry experts	1. Accessibility to the most updated databases 3. Industrial managers, researchers and policy makers will perceive the benefits of the EU policies 5. The industries are reluctant to the changes
1.5.1 *(accomplished in the Phase 1)* 1.5.2 *(accomplished in the Phase 1)* 1.5.3 Review policies and relevant existing and future legislation for industrial pollution control and identification enforcement mechanisms on a country level; 1.5.4 Compare and identify gaps between relevant EU and national legislation; 1.5.5 Develop necessary complementing policy and legal measures for the introduction of BAT (regulatory and legal issues, awareness raising, financial fines and incentives, etc); 1.5.6 Identify in relation to Significant Impact Areas, industrial "hot spots" having a significant impact on water resources and water quality; 1.5.7 Develop appropriate implementation concepts for a step-by-step introduction of BAT in industrial sectors; 1.5.8 Organize workshops with participants from relevant ministries, industrial managers, banking institutions, introducing information on BAT, financial support, etc.			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.6: Policy reform and legislation measures for the development of cost-covering concepts for water and waste water tariffs, focusing on nutrient reduction and control of dangerous substances	1. Economic and financial viability of the tariffs reform for the water companies in specific countries are ensured 2. Improved knowledge on the best tariff alternatives is ensured for all stakeholders	1. Financial accounts of the water companies 2. Economically and socially accepted tariff scheme rules	1. Information accessibility; 2. Political and administrative constraints 3. Keeping the water companies cooperative and competitive 4. Absence of governmental income support programme
1.6.1 *(accomplished in the Phase 1)* 1.6.2 *(accomplished in the Phase 1)* 1.6.3 Develop for the different categories of DRB countries alternative concepts for tariff reforms, considering cost covering models also for the low income segments of the population; 1.6.4 Assess for the particular DRB countries the potential for additional revenues from water and wastewater services as additional funding sources for water sector operation and investment.			
Output 1.7: Implementation of effective systems of water pollution charges, fines and incentives, focusing on nutrients and dangerous substances	1. Recommended water pollution fines, incentives and tariffs are harmonized and implemented 2. Information on the cost-benefits of incentives based on instruments is discussed and disseminated	1. Country-specific recommendations for rules on water pollution fines, incentives and tariffs 2. Workshop reports , number of trained participants	1. Low government willingness to introduce economic incentives 2. Lack of commitment of economic authorities to introduce incentives 3. Limited knowledge on costs and benefits of incentives schemes
1.7.1 *(accomplished in the Phase 1)* 1.7.2 *(accomplished in the Phase 1)* 1.7.3 *(accomplished in the Phase 1)* 1.7.4 Develop appropriate concepts for the introduction of balanced and effective systems of water pollution charges, fines and incentives in the particular DRB countries; 1.7.5 Organize workshops on the application of appropriate water pollution charges, fines and incentives, with participants from relevant ministries, municipalities and the private sector.			

Objective 1: Creation of sustainable ecological conditions for land use and water management			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 1.8: Recommendations for the reduction of phosphorus in detergents	1. Lessons on phosphorus reduction are learned during implementation of new phasing-out programme for P-detergents	1. Monitoring and evaluation reports on P reduction 2. Recommendations on future actions on phosphorus reduction	1. Low priority concern for introducing detergents standard at governmental level 2. Availability of data from some countries
1.8.1 *(accomplished in the Phase 1)*			
1.8.2 *(accomplished in the Phase 1)*			
1.8.3 *(accomplished in the Phase 1)*			
1.8.4 Organize a basin-wide workshop dealing with the implementation of recommendations at national level			
1.8.5 Monitor and evaluate results.			

Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 2.1: Setting up of "Inter-ministerial Committees" for development, implementation and follow-up of national policies legislation and projects for nutrient reduction and pollution control	***Carried out only in the Phase 1 of the Project!***		
Output 2.2: Development of operational tools for monitoring, laboratory and information management and for emission analysis from point and non-point sources of pollution with particular attention to nutrients and toxic substances	1. Classification of water quality objectives and nutrient and toxics quality conditions is finalized 2. Inventories of emissions from priority point and non-point sources ("hot spots") for P and N are revised 3. Inventory of priority chemicals in line with EU are updated 4. Laboratories are better equipped and operational 5. Information system and network are operational	1. Reviewed standards and river classification 2. Annual lists of N, P emissions from point and non-point sources 3. Reviewed statistics of priority chemicals 4. Results of analysis 5. Annual transmission reports on EU priority substances	1. Criteria for harmonization agreed 2. - 4. Continuous capacity building and training ensured 4. Need for participatory approach
2.1.1 Harmonize water quality standards and quality assurance for nutrients and toxic substances; 2.1.2 Assist in the creation of database and emission inventory for point and non-point sources of phosphorus and nitrogen, including maps (municipal, industrial and agricultural "hot spots"), 2.1.3 Optimize TNMN and identify sources and amounts of transboundary pollution of substances on the list of EU priority substances.			

Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 2.3: Improvement of procedures and tools for accidental emergency response with particular attention to transboundary emergency situations	1. Guidelines on accidental pollution prevention are reviewed 2. National stations - PIACs for MD, UA, BiH, YU are fully operational 3. Inventory and assessment of high accidental risks spots are completed in all countries 4. DBAM is improved to respond to pollution transport issues 5. Cooperation on preventive and emergency measures is improved	1. Upgraded Guidelines on interventions during accidents 2. Transmission files 3. , 5. Accessible reports and statistics of emissions 4. Rules of operation of DBAM 5. Completed workshops with trained participants	1. Low priority for the accidental pollution issues in the ministries 2. Delays in regulatory decisions 3. Financial and material resources secured 4. Countries need to receive information and assessment in developing new management skills 5. Methods have not focused on integrating knowledge into practical solutions to intervene during accidents
2.3.1 Reinforce operational conditions in the national AEPWS alert centers (PIACs) and geographical extension in Bosnia-Herzegovina and the FR of Yugoslavia; 2.3.2 Complete the inventory presently available only for the upper Tisza river basin, and evaluate all high -accident-risk spots in all countries in the Danube River Basin, in line with EU legislation and considering that similar accidental "hot spot" industrial activities exist in many transition countries 9), 2.3.3 Design preventive measures, adjust national legislation and improve compliance with safety standards, 2.3.4 Maintenance and calibration of the Danube Basin Alarm Model (DBAM), to predict the propagation of the accidental pollution and evaluate temporal, spatial and magnitude characteristics in the Danube river system and to the Black Sea; 2.3.5 Organization of workshops to reinforce cooperation in accidental emergency warning and development of preventive measures.			

[9] The F.R. of Yugoslavia is situated in an extreme important geographical position in the center of the Danube River Basin where the most important tributaries, Tiza, Save and Drave are joining the Danube. During the recent accidental pollution the AEWS has also informed Yugoslavia and cooperated with its technical staff to monitor the effects of accidental pollution. The UNEP Balkan Task Force and the EU-Baia Mare Task Force have closely cooperated with Yugoslavian authorities in the assessment of accidental pollution and the design of emergency measures.

Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin

Objective / Output / Activity	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 2.4: Support for reinforcement of the ICPDR Information System (DANUBIS)	1. Networking within DANUBIS by all ICPDR contracting parties is realized 2. Interactive DANUBIS web site is operational 3. Mechanisms of having access to information are available	1. Number of users of the working area by ICPDR Expert Groups 2. Information exchange during emergency situations 3. Regular updated DANUBIS data base 4. Number of trained users	1. Delays in reaching agreement on the integration within WPPCM 2. Low commitment and limited resources of governments to link to DANUBIS 3. Inadequate user skills 4. Countries must undertake interactions to facilitate transboundary communication
2.4.1 *(accomplished in the Phase 1)* 2.4.2 Link all Contracting Parties of the ICPDR and other participating countries to DANUBIS, which implies the development and implementation of national linkages and the establishment of operational units to communicate also in case of accidental emergency situations; 2.4.3 Reinforce DANUBIS through the implementation of an interactive web-site to integrate further textual, numerical and digital mapping information and to fulfill all requirements of the work of the nutrient reduction programme (communication, monitoring, public information, etc.); 2.4.4 Launch an extensive training programme and organize a series of workshops at different user levels and in different regions of the Danube River Basin in order to train and assist future users in the best use of the tools made available by the system.			
Output 2.5: Implementation of the "Memorandum of Understanding" between the ICPDR and the ICPBS relating to discharges of nutrients and hazardous substances to the Black Sea	1. Joint work programme for MoU is applied 2. Reports are produced according to new rules 3. Agreement on regular meetings is concluded	1. Regular meetings (meeting reports) of joint working group 2. – 4. Agreements on the indicators, monitoring and reporting	1. Unequal involvement of ICPDR and ICPBS 2. Delayed national contributions the MoU
2.5.1 Develop joint work programme for MOU implementation 2.5.2 Define and agree on status indicators to monitor nutrient transport from the Danube and change of ecosystems in the Black Sea; 2.5.3 Define and establish reporting procedures 2.5.4 Reestablish and organize regular meeting of the Joint Danube - Black Sea working Groups to evaluate progress of nutrient reduction and recovery of Black Sea ecosystems; 2.5.5 *(accomplished in the Phase 1)*			

Objective 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the Danube River Basin			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 2.6: Training and consultation workshops for resource management and pollution control with particular attention to nutrient reduction and transboundary issues	1. Knowledge, professional skills and understanding on nutrient reduction issues are enhanced 2. Training evaluation is updated	1. Number of conducted workshops and trained participants 2. Evaluation Report	1. Lack of participation, differences in competence of participants, absence of certain DRB countries in training workshops
Training courses in the following fields: 2.6.1 Develop policy and legal frame for transboundary cooperation in nutrient reduction and control of toxic substances (in the context of bilateral and multilateral agreements); 2.6.2 Bring technical and legal issues of river basin planning and transboundary water resources management in line with the new EU Water Framework Directive with a view to ensuring effective nutrient reduction; 2.6.3 Technical and legal issues (land reclamation) of wetland restoration and management to assure nutrient removal; 2.6.4 Innovative technologies for municipal and industrial waste water collection, treatment; use of sewage and animal waste as fertilizer to reduce nutrient emissions; 2.6.5 Technical and legal issues of management and control of use of agrochemicals and manure; 2.6.6 Prepare documents for nutrient reduction projects with international co-funding and application of GEF criteria concerning “incremental cost” calculation; 2.6.7 Training courses for NGO activities.			

Objective 3: Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems

Objective / Output / Activity	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 3.1: Support for institutional development of NGOs and community involvement	1. Optimal operation of DEF secretariat is achieved 2. Knowledge on nutrient and toxic are improved 3. Reports on nutrient and toxic, in national languages, are published 4. Cooperation between NGOs and governments is strengthened	1. Praised service of the Secretariat 2. Implemented training programme 3. Printed publications 4. First partnerships of NGOs and governments	1. Consistent performance of the Secretariat 2. Low interest of NGOs in pollution issues 4. Low willingness of governments to collaborate with NGOs, resp. of NGOs with governments
3.1.1 Support for the DEF Secretariat for operation, communication and information management; 3.1.2 Organization of consultation meetings and training workshops on nutrients and toxics issues; 3.1.3 Editing of special NGO publications in national languages on nutrients and toxic substances; 3.1.4 Organization of training courses for development of NGO activities and cooperation in national projects.			
Output 3.2: Applied awareness raising through community based "Small Grants Programme"	1. Efficient and effective NGO involvement through one regional and two local grants programmes	1. List of proposed and implemented grants projects 2. Local impacts of NGO activities on pollution problems	1. Correct acknowledgement of the SGP ensured 2. Failure of NGO activities
3.2.1 *(accomplished in the Phase 1)* 3.2.2 Implementation of region-wide granting programme focusing on demonstration activities and awareness campaigns for sustainable land management and pollution reduction (nutrients) in the agricultural, industrial and municipal sectors; 3.2.3 Implement two granting programmes at the local and national level in terms of small scale community based investment projects for pollution control, rehabilitation of wetlands, best agricultural practices, reduction of use of fertilizers, manure management, improvement of village sewer systems, etc.			
Output 3.3: Organization of public awareness raising campaigns on nutrient reduction and control of toxic substances	1. Public campaigns are implemented 2. Sufficient and reliable information for mass media purposes are prepared and published 3. Basin-wide documents are periodically published	1. Number of trained participants and national campaigning activities 2. Public interest in material (e.g. via media reports) 3. Printed and published material	1. Willingness of local administration to support organization of public events; 2. Campaign subject bears local conflicts with polluter 3. Information access restricted 4. Limited funds
3.3.1 Conceptualization and implementation of public awareness raising campaigns on nutrient-related issues in all DRB countries, national projects awarded through grants; 3.3.2 Development and production of materials for public press and mass media on nutrients and toxic substances; 3.3.3 Support publication of scientific documents and regular papers or special issues on water management and pollution reduction with particular attention to nutrient issues and Black Sea recovery.			

Objective 4: Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances			
Objective / Output / Activity	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and Risks**
Output 4.1: Development of indicators for project monitoring and impact evaluation	1. Monitoring and evaluation system for project implementation is operational 2. Indicators for emissions and water quality are applied to respond to nutrient concerns 3. Progress indicators for monitoring project progresses are applied 4. Impact indicators to evaluate environmental effects are applied 5. Guidelines for the use of monitoring and impact indicators are available	1. Monitoring and Evaluation System at the ICPDR and at national level 2. Improved statistics on the emissions and water quality status (TNMN yearbooks) 2.-4. Data from monitoring systems 6. Guidelines	1.-5. Continued cooperation of all ICPDR Expert Groups 1.-5. Countries need to apply selected indicators
4.1.1 Establishing a system for M&E in using specific indicators for process (legal and institutional frame), stress reduction (emissions, removal of hot spots) and environmental status (water quality, recovery of ecosystems) to demonstrate results of programme and project implementation and to evaluate environmental effects of implementation of policies and regulations (nutrient reduction); 4.1.2 Reviewing in the frame of the ICPDR Trans National Monitoring Programme (TNMN) specific indicators (e.g. bio-indicators) for emission control and water quality monitoring with particular attention to nutrients and toxic substances; 4.1.3 Establishing monitoring system in using specific progress indicators (benchmarks) for project implementation (GEF- Nutrient reduction projects activities); 4.1.4 Implementing ecological status assessment in line with requirements of EU WFD using specific bio-indicators to demonstrate effects of pollution /nutrient reduction in water-bodies and ecosystems; 4.1.5 Prepare a manual on use and application of monitoring and impact indicators.			
Output 4.2: Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other substances on the Danube and the Black Sea ecosystems	1. Assessment of the sediment contents and impact on environment and health in relation to the sediments dynamics are analyzed 2. Recommendations, control measures and monitoring programmes are proposed	1. Report including maps and diagrams showing the existing situation and expected trends 2. Recommendations for Joint Action Programme	1. Appropriate analysis equipment, data and trained personnel available 2. Financial sources assured
4.2.1 Collect and review existing data and information on present situation; 4.2.2 Assess main types and quantities of dangerous substances; 4.2.3 Assess potential environmental impacts in the Danube and the Black Sea; 4.2.4 Forecast development for a period of 20 years; 4.2.5 Discuss possible precautionary and rehabilitation measures for the Danube and the Black Sea; 4.2.6 Prepare recommendations how to deal with this problem in the forthcoming decade (measures to be include in the a joint action programme of the ICPDR); 4.2.7 Propose further monitoring programmes.			

Objective 4: Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances

Objective / Output / Activity	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 4.3: Monitoring and assessment of nutrient removal capacities of riverine wetlands	1. Observation programme to assess annual removal capacities is implemented 2. Effects on pollution removal are assessed and quantified and wetland management schemes are identified 3. DRB governments agree on wetland management plan	1. Observation programme file and data 2. Recommendations for specific wetland management and restoration 3. Government commitment	1. Lack of understanding/support on the need to restore wetlands for pollution reduction 2. Limited availability of other data sources 3. Difference in effects between pollution removal and ecology needs in wetland management 4. Lack in follow-up funding for observation and wetland management programmes
4.3.1 *(accomplished in the Phase 1)* 4.3.2 *(accomplished in the Phase 1)* 4.3.3 Implement the observation programme to assess the annual removal capacity (tons of N & P and of harmful substances per ha) for each category of wetland for a period of 20 years (3 years covered by the present project) 4.3.4 Assess possibilities for follow-up financing of observation programme after 2005; 4.3.5 Evaluate the aggregated removal capacities/potentials of nutrient & other harmful substances for the wetlands proposed for restoration (DPRP), taking into account the results of other investment and observation pro-grams (incl. Danube Partnership, "Lower Danube Green Corridor"); 4.3.6 Develop optimized wetland management programmes to assure ecologically acceptable nutrient removal in the Danube River Basin; 4.3.7 Prepare relevant regulations for wetland restoration to assure implementation of projects with ecologically acceptable removal capacities for nutrients & other harmful substances.			
Output 4.4: Danube Basin study on pollution trading and corresponding economic instruments for nutrient reduction	1. Comprehensive discussion paper addresses the main stakeholders 2. Options are intensively discussed at DRB level	1. Discussion paper 2. Workshop conclusions	1. "Pollution trading" is for some contracting parties (EU) not an option to be considered; 2. Constraints for governmental support to implement economic instruments 3. Tradable permits must be carefully adapted to economic and social condition of the countries and regions
4.4.1 *(accomplished in the Phase 1)* 4.4.2 *(accomplished in the Phase 1)* 4.4.3 *(accomplished in the Phase 1)* 4.4.4 Present the basic findings and discuss the results with all stakeholder groups on a DRB wide workshop.			

ANNEX 3 STAP Review (UNDP) and Response

Annex 3.1 STAP Review

Annex 3.2 Response to STAP Review

Elaboration of a Danube Regional Project: Strengthening of Implementation Capacities for Nutrient Reduction and Transboundary Cooperation. Proposed UNDP/GEF: International Waters Project

STAP-Roster Independent Technical Review undertaken by

Dr Gunilla Björklund
Marmorv 16A
SE-752 44 Uppsala, SWEDEN

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Overall impressions - general soundness

Since 1992 the European Community and the UNDP/GEF have supported efforts of the Danube countries and the Interim Commission for the Protection of the Danube River (ICPDR) to develop the necessary mechanisms for effective implementation of the Convention.

The new project is developed to ensure efficient implementation of the regional Strategic Action Plan based on national contributions, the Transboundary Analysis of causes and effects of transboundary pollution within the Danube River Basin and on the Black Sea and the Pollution Reduction Program resulting from that. In order to do so it would be necessary to reinforce the appropriate development and application of policies, strategies and legislation for transboundary pollution reduction at the national level.

The new GEF assistance, which is planned within the frame of the Danube/Black Sea Basin Strategic Partnership for the Danube and the Black Sea Basin, should complement the activities of the ICPDR and the Black Sea Program Implementation Unit. It shall

- provide assistance for them to reinforce their activities in terms of policy/legislative reforms and enforcement of environmental regulations, including for measures introduced at the national levels of the participating countries, and
- facilitate project implementation in providing a framework for dissemination and replication of successful demonstration that will be developed through the implementation of investment projects through the World Bank-GEF Partnership Investment Facility for Nutrient Reduction.

The Danube Regional Project is, according to the Project Brief, to be seen as an Integral Part of the Danube/Black Sea Basin Strategic Partnership and a logical continuation of the GEF support for capacity building provided for a period of six years to the countries of the Danube River Basin. The Project is to utilise available expertise and build on the existing mechanisms and structures.

The overall impressions of the project as described in the project brief are very positive. Even though a Strategic Action Plan has been developed and revised for the area it is essential that regional policies and strategies be coordinated with the development of national policies and legislation and implemented through national investment programs. Some of the countries will need assistance to develop adequate policies and legislation for emission control with particular attention to nutrient reduction. This is particularly true for those who will need to re-organise their political, legal, administrative and socio-economic structures due to the economic transition process or to the aftermath of the war. The project will facilitate the provisions for protection of the environment in those countries where environment protection and investments for pollution reduction are not the priority issues in the near future. It will thus help providing for a coordinated regional and transboundary water management of the whole Danube River Basin including its discharge area in the Black Sea.

1. Relevance to GEF, priority

The project would be of great importance and it relates highly to the *International Waters focal area* as it will ensure protection of international waters (the Danube River Basin and the Black Sea), sustainable management of natural resources and biodiversity. It is of high priority as it would help ensuring

implementation of regional policies and strategies for nutrient and pollution reduction at national level in the whole river basin.

It has particular relevance under the Operational Program Number 8: *Waterbody-Based Operational Program* and to some extent under OP No 10: *Contaminant-Based OP*. It aims at "undertaking projects that involve helping groups of countries to work collaboratively with the support of implementing agencies in achieving changes in sectoral policies and activities so that transboundary environmental concerns degrading specific water-bodies can be resolved"(OP 8). It does also aim at "demonstrate ways of overcoming barriers to the use of best practices for limiting release of contaminants causing priority concerns in the International Waters focal area…"(OP 10).

2. Objectives

The overall objective of the Danube Regional Project is to "complement the activities of the ICPDR required to provide a regional approach and global significance to the development of national policies and legislation and the priority actions for nutrient reduction and pollution control with particular attention to transboundary effects within the DRB and the Black Sea area". This objective is valid although it lacks the recognition of the environmental concerns that needs to be taken into account. A long term objective should be to achieve environmental sustainability in the transboundary Danube River Basin including in its discharging area in the Black Sea. To reach such an objective it would be necessary to apply the regional approach and undertake the priority actions as described. It is essential that a GEF supported project is focused towards achieving sustainable transboundary *ecological* effects.

The presented four immediate objectives:

- "development of nutrient reduction policies and legal instruments and measures for exacting compliance;
- institutional strengthening and capacity building for transboundary cooperation in nutrient reduction;
- awareness raising and reinforcement of NGO participation in nutrient reduction activities; and
- strengthening the monitoring and information mechanisms on transboundary pollution control and nutrient reduction"

in the presentation should further be regarded as activities to reach the objectives. They do, how ever necessary, sound too technical to be regarded as objectives and do not pay sufficient attention to the ecological concerns. The activities as described in the project brief would if properly implemented result in a transboundary cooperation and ecological sustainability but the latter must be clearly identified as an objective to ensure such a result.

3. Approach

The project brief defines the approach as being coherent and coordinated and that the project will build on existing mechanisms and structure. As the proposed Danube Regional Project is to be an integral part of the proposed Danube/Black Sea Basin Strategic Partnership it needs to be identified within that framework. The approach is technically sound, in line with the overall framework. It would result in achieving the objectives as presented, including the environmental benefits that are not identified in the project brief but would be an overall long-term objective for GEF support.

As the Black Sea is a water-body big enough to have a coriolis induced current system, nutrients and pollution discharged by the Danube River into the Black Sea might adversely affect coastal zones of other countries in the Black Sea. These effects might be defined in earlier Black Sea projects but are not taken into account in the current project brief. Such effects need to be made clear in order to define whether any of the other Black Sea riparians ought to be included in the project.

4. Background Information

As the Danube Regional Project is seen as a logical continuation of previous projects, focusing on Strengthening of Implementation Capacities for Nutrient Reduction and Transboundary Cooperation background information provided is essentially building on information within this context. This information is both relevant and substantial. It would, however, be useful to include project evaluations of these projects

as annexes. This information could serve as a useful point-of-departure for the project as defined in the project brief.

5. Funding level

The project needs to be seen within the framework of the whole Danube-Black Sea program which is composed of three complementary parts:

1. a series of country-related investment projects executed through the World Bank-GEF Partnership Investment Facility for Nutrient Reduction with GEF financial support,
2. two Regional Projects, for the Danube River Basin and the Black Sea respectively, and
3. other GEF and donor interventions in the basin targeting reduction of nutrients and toxic pollutants.

The proposed Danube Regional Project should be implemented within that context, thus taking into account and build on the existing mechanisms and structures. The project would thus not need to establish new systems which of course would imply financial as well as structural benefit. Funding for the Environmental protection and nutrient reduction in the Danube River Basin will be provided from different sources in accordance with what is described in the project brief. The proposed UNDP/GEF Danube Regional Project would be an integral part of that. Against this background, the funding level should be seen as appropriate.

6. Innovation

The most innovative aspects of this project proposal lie in the framework in which it is based, the Danube/Black Sea Strategic Partnership. This has a truly integrated approach, including its technical aspects of transboundary pollution reduction, and application of regional policies at national level to protect the environment. The transboundary cooperation that is needed to succeed in development and application of policies and strategies between countries where the economic, social and political pre-conditions are so different is a true challenge.

One of the activities to be undertaken as part of the project in order to meet the immediate "objective" of awareness raising and reinforcement of NGO participation in nutrient reduction activities is supporting NGOs to boost their capacities for active participation within the project by setting up a Small Grants Program. This would provide for cooperation between all actors, governmental as well as NGOs. Such innovative cooperation if successful could serve as a model for future cooperation and collaboration in larger, integrated GEF-supported projects.

7. Strengths/Weakness

The greatest strength of the project is the it could be seen as a natural continuation of two successful projects, and what is described above as the most innovative aspects of the proposal.

The most significant weaknesses of the proposal is that it is lacking proper references to the environmental impacts of the nutrient and toxic emissions. Further, although the strengthening of the monitoring and information mechanisms is one of the immediate "objectives", there is no proper process for Monitoring and Evaluation of the project included in the project brief. The component aiming at Strengthening of the monitoring and information mechanisms would include provisions for "Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other toxic substances on the Danube and the Black Sea ecosystems", "Monitoring and assessment of wetlands' nutrient removal capacities", and "Danube Basin feasibility study and consultation process on economic instruments for nutrient reduction".

Some of the aspects of these monitoring and assessments could be used in a Project Monitoring and Evaluation process of the Project Implementation but it is important to early in the process establish criteria and indicators in order to be able to undertake a proper process, thereby to identify successes and failures in the project and its implementation.

The project, which is a very useful and innovative project would benefit from a stronger reference to and analyses of environmental impacts and ecosystem degradation from the nutrient and toxic effluents. A better developed system for project Monitoring and Evaluation should be developed. And an evaluation report from the earlier GEF supported projects in the Danube and Black Sea should be annexed. This would strengthen the project.

28 August, 2000

Gunilla Björklund

Response from the ICPDR/GEF Project team to the comments from:

STAP-Roster Independent Technical Review undertaken by

Dr Gunilla Björklund

Marmorv 16A

SE-752 44 Uppsala, SWEDEN

On the Danube Regional Project: "Strengthening of Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin

General comment:

We appreciate the comments received from Dr Gunilla Björklund, which are well founded and which we have taken into account to prepare a revised version of the Project Brief. This revised version reflects also other comments received in the meantime from participating countries and from the GEF Secretariat, as from Al Duda and others.

Specific amendments in relation to STAP-Roster Independent Technical Review:

2. Objectives

1. We think that the overall objective reflects the situation under given conditions and in how far the project can contribute to environmental concerns.

2. The Project Objective has been amended : The overall objective of the Danube Regional Project is to complement the activities of the ICPDR required to provide a regional approach and global significance to the development of national policies and legislation and the definition of priority actions for nutrient reduction and pollution control with particular attention **to achieving sustainable transboundary ecological effects** within the DRB and the Black Sea area.

3. The four immediate objectives have been changed (made less technical), we do hope with some success :

   OBJECTIVE 1: Creation of sustainable ecological conditions for land use and water management

   OBJECTIVE 2: Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the DRB

   OBJECTIVE 3: Strengthening of public involvement in environmental decision making and reinforcement of community actions for pollution reduction and protection of ecosystems

   OBJECTIVE 4: Reinforcement of monitoring, evaluation and information systems for transboundary pollution control and nutrient reduction

3. Approach

Effects concerning the ecosystems in the Black Sea and its coastal zones are indeed defined in other reports : (i) we do hope in the Black Sea Project Brief and (ii) in the report , Annex 11 to the Danube Project Brief :"Causes and Effects of Eutrophication in the Black Sea".

4. Background Information

Two evaluation reports from the UNDP/GEF Pollution Reduction Program have been added in Annex 12 : (i) Terminal Evaluation from UNOPS, (ii) Terminal Report from the Project Manager.

6. Innovation

Thanks for recognizing this innovative approach; I do hope that all decision makers see this as well: "One of the activities to be undertaken as part of the project in order to meet the immediate "objective" of awareness raising and reinforcement of NGO participation in nutrient reduction activities is supporting NGOs to boost their capacities for active participation within the project by setting up a Small Grants Program. This would provide for cooperation between all actors, governmental as well as NGOs. Such innovative cooperation if successful could serve as a model for future cooperation and collaboration in larger, integrated GEF-supported projects".

7. Strengths/Weakness

To provide information on environmental impacts of the nutrient and toxic emissions, we have added as Annex 11 a report on "Causes and Effects of Eutrophication in the Black Sea"; this report has been elaborated in June 1999 by the joint Danube/Black Sea Ad-hoc working Group and is the basis for the "Memorandum of Understanding" between the Danube and the Black Sea Commission and describes the effects of nutrient emission and toxic substances to the Black Sea.

Concerning Objective 4, which has been reformulated, we have moved Activity 2.4 under Objective 4 to adequately respond to activities in relation to monitoring, evaluation and information, with particular attention to indicators. Activities under Objective 4 are now the following:

(i) Development of Indicators for project monitoring and impact evaluation;
(ii) Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other toxic substances on the Danube and the Black Sea ecosystems;
(iii) Monitoring and assessment of wetlands nutrient removing capacities;
(iv) Danube Basin feasibility study and consultation process on economic instruments for nutrient reduction.

Concerning development of indicators please refer also to Annex 8.5 : "Development of Process, Stress Reduction and Environmental Status Indicators to Monitor Nutrient Reduction and its Effects in the Danube River and the Black Sea".

Vienna, August 31, 2000
Joachim Bendow
Executive Secretary ICPDR

ANNEX 4 Project Budget – Project Phase 1

DANUBE REGIONAL PROJECT - REVISED BUDGET - PHASE 1

Project Components and Objectives	Permanent Project Staff				Sub-contractors/				Workshops/Training Courses/Meetings				Investments (Small Grants, equip./trans.)	Operation & Admin. support	Support cost UNOPS/ ICPDR	TOTAL Budget
	Professional Staff		Admin. Technical Support Staff		Int. Consultants (18000 USD/month)		National Consultants (5000 USD/month)		(natl.: 50 USD per diem /day/partic., 20 USD travel) (intl.: 120 USD/day/partic.; 500 USD travel / partic.)							
	Months	USD	Months	USD	Months	USD	Months	USD	No of workshops	No of Particip.	No of Days	USD	USD	USD	USD	USD
1. Creation of sustainable ecological conditions for land use and water management																
General Project Costs	10	130,000	20	125,000									80,000	100,000	194,032	629,032
1.1 Development and implementation of policy guidelines for river basin and water resources management.					12	216,000	22	110,000	4	40	3	121,600				447,600
1.2 Reduction of nutrients and other harmful substances from agricultural non-point sources through agricultural policy changes					10	180,000	35	175,000	1	40	2	25,600				380,600
1.3 Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point-sources					6	108,000	22	110,000	2	40	2	51,200				269,200
1.4 Policy development for wetlands rehabilitation under the aspect of appropriate land use					6	108,000	20	100,000	2	30	2	38,400				246,400
1.5 Industrial reform and development of policies and legislation for application of BAT (best available techniques including cleaner technlogies) towards reduction of nutrient (N and P) and dangerous substances					8	144,000	20	100,000	1	40	2	25,600				269,600
1.6 Policy reform and legislation measures for development of cost-covering concepts for water and waste water tariffs, focusing on nutrient reduction and control of dangerous substances					4	72,000	15	75,000	1	25	2	16,000				163,000
1.7 Implementation of effective systems of water pollution charges, fines and incentives, focusing on nutrients and dangerous substances					2	36,000	8	40,000	1	25	2	16,000				92,000
1.8 Recommendations for the reduction of phosphorus in detergents					4	72,000	10	50,000				0				122,000
SUBTOTAL	**10**	**130,000**	**20**	**125,000**	**52**	**936,000**	**152**	**760,000**	**11**	**215**	**13**	**294,400**	**80,000**	**100,000**	**194,032**	**2,619,432**

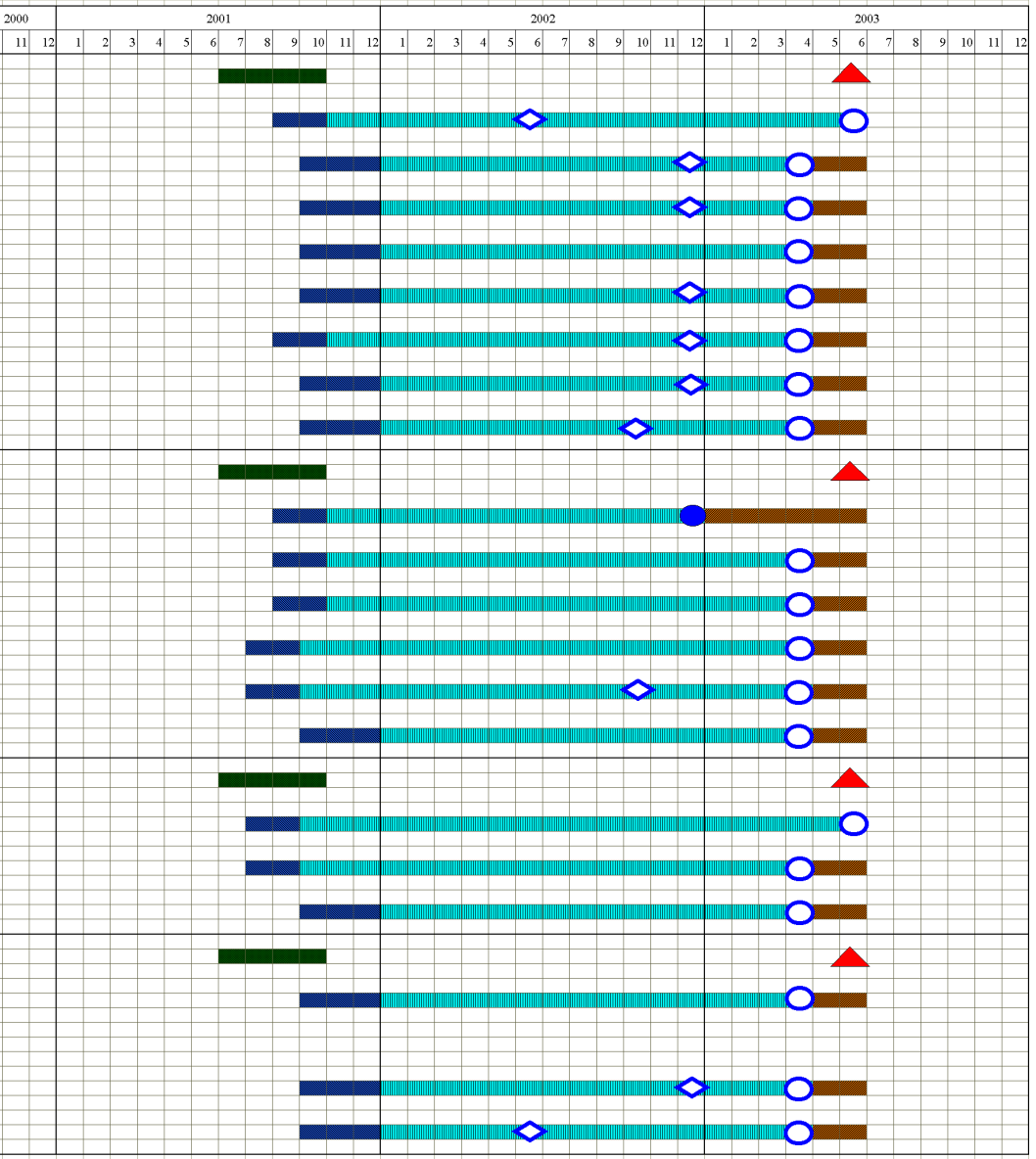
Project Components and Objectives	Permanent Project Staff				Sub-contractors/				Workshops/Training Courses/Meetings				Investments (Small Grants, equip./trans.)	Operation & Admin. support	Support cost UNOPS/ ICPDR	TOTAL Budget
	Professional Staff		Admin. Technical Support Staff		Int. Consultants (18000 USD/month)		National Consultants (5000 USD/month)		(natl.: 50 USD per diem /day/partic., 20 USD travel) (intl.: 120 USD/day/partic.; 500 USD travel / partic.)							
	Months	USD	Months	USD	Months	USD	Months	USD	No of workshops	No of Particip.	No of Days	USD	USD	USD	USD	USD
2. Capacity building and reinforcement of transboundary cooperation for the improvement of water quality and environmental standards in the DRB																
General Project Costs	5	65,000	10	62,500										50,000	65,755	243,255
2.1 Setting up of "Inter-ministerial Committees" for development, implementation and follow-up of national policies legislation and projects for nutrient reduction and pollution control					1	18,000	4	20,000								38,000
2.2 Development of operational tools for monitoring, laboratory and information management and for emission analysis from point and non-point sources of pollution with particular attention to nutrients and toxic substances					1	18,000	7	35,000	2	22	4	38,720	87,000			178,720
2.3 Improvement of procedures and tools for accidental emergency response with particular attention to transboundary emergency situations					1	18,000	7	35,000	2	22	2	28,160				81,160
2.4 Support for reinforcement of ICPDR Information and Monitoring System (DANUBIS)					3	54,000	4	20,000	2	22	2	28,160	100,000			202,160
2.5 Implementation of the "Memorandum of Understanding" between the ICPDR and the ICPBS relating to discharges of nutrients and hazardous substances to the Black Sea					1	18,000			1	15	2	9,600				27,600
2.6 Training and consultation workshops for resource mamangement and pollution control with particular attention to nutrient reduction and transboundary issues					4	72,000			2	35	2	44,800				116,800
SUBTOTAL	**5**	**65,000**	**10**	**62,500**	**11**	**198,000**	**22**	**110,000**	**9**	**217**	**22**	**149,440**	**187,000**	**50,000**	**65,755**	**887,695**

Project Components and Objectives	Permanent Project Staff				Sub-contractors/				Workshops/Training Courses/Meetings				Investments (Small Grants, equip./trans.)	Operation & Admin. support	Support cost UNOPS/ ICPDR	TOTAL Budget
	Professional Staff		Admin. Technical Support Staff		Int. Consultants (18000 USD/month)		National Consultants (5000 USD/month)		(natl.: 50 USD per diem /day/partic., 20 USD travel) (intl.: 120 USD/day/partic.; 500 USD travel / partic.)							
	Months	USD	Months	USD	Months	USD	Months	USD	No of workshops	No of Particip.	No of Days	USD	USD	USD	USD	USD
3. Strengthening of public involvement in environm. decision making and reinforcement of community actions for pollution reduction and protection of ecosystems																
General Project Costs	2	26,000	4	25,000										50,000	66,212	167,212
3.1 Support for institutional development of NGOs and community involvement	3	21,000					4	20,000	2	35	2	34,300		200,000		275,300
3.2 Applied awareness raising through community based "Small Grants Programme"	5	35,000			4	72,000	12	60,000	1	35	3	21,350				188,350
3.3 Organization of public awareness raising campaigns on nutrient reduction and control of toxic substances	10	70,000			1	18,000	15	75,000					100,000			263,000
SUBTOTAL	**20**	**152,000**	**4**	**25,000**	**5**	**90,000**	**31**	**155,000**	**3**	**70**	**7**	**55,650**	**100,000**	**250,000**	**66,212**	**893,862**
4.Reinforcement of monitoring, evaluation and information systems to control transboundary pollution, and to reduce nutrients and harmful substances																
General Project Costs	3	39,000	7	43,750										40,000	44,371	167,121
4.1 Development of indicators for project monitoring and impact evaluation					3	54,000	11	55,000	1	35	2	17,150				126,150
4.2 Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other dangerous substances on the Danube and the Black Sea ecosystems *(to be carried out in the Phase 2)*																
4.3 Monitoring and assessment of nutrient removal capacities of riverine wetlands					3	54,000	6	30,000	1	30	2	19,200		6,140		109,340
4.4 Danube Basin study on pollution trading and corresponding economic instruments for nutrient reduction					8	144,000	6	30,000	1	35	2	22,400				196,400
SUBTOTAL	**3**	**39,000**	**7**	**43,750**	**14**	**252,000**	**23**	**115,000**	**3**	**100**	**6**	**58,750**	**0**	**46,140**	**44,371**	**599,011**
TOTAL BUDGET	**38**	**386,000**	**41**	**256,250**	**82**	**1,476,000**	**228**	**1,140,000**	**26**	**602**	**48**	**558,240**	**367,000**	**446,140**	**370,370**	**5,000,000**

ANNEX 5 Project Implementation Schedule – Project Phase 1

Annex 5: Project Implementation Schedule - Danube Regional Project - Phase 1

	PROJECT COMPONENTS AND OBJECTIVES
1.	**Creation of sustainable ecologic. conditions for land use and water management**
1.1	Development and implementation of policy guidelines for river basin and water resources management
1.2	Reduction of nutrients and other harmful substances from agricultural point and non-point sources through agricultural policy changes
1.3	Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point and non-point sources
1.4	Policy development for wetlands rehabilitation under the aspect of appropriate land use
1.5	Industrial reform and development of policies and legislation for application of BAT
1.6	Policy reform and legislation measures for the development of cost-covering concepts for water and waste water tariffs
1.7	Implementation of effective systems of water pollution charges, fines and incentives, focusing on nutrients and dangerous substances
1.8	Recommendations for the reduction of phosphorus in detergents
2.	**Capacity building and reinforcement of transboundary cooperation**
2.1	Setting up of "Inter-ministerial Committees" for development, implementation and follow-up of national policies legislation and projects for nutrient reduction and pollution control
2.2	Development of operational tools for monitoring, laboratory and information management and for emission analysis from point and non-point sources of pollution
2.3	Improvement of procedures and tools for accidental emergency response with particular attention to transboundary emergency situations
2.4	Support for reinforcement of ICPDR Information System (DANUBIS)
2.5	Implementation of the "Memorandum of Understanding" between the ICPDR and the ICPBS relating to discharges of nutrients and hazardous substances to the Black Sea
2.6	Training and consultation workshops for resource management and pollution control with particular attention to nutrient reduction and transboundary issues
3.	**Strengthening of public involvement in environmental decision making and reinforcement of community actions**
3.1	Support for institutional development of NGOs and community involvement
3.2	Applied awareness raising through community based "Small Grants Programme"
3.3	Organization of public awareness raising campaigns on nutrient reduction and control of toxic substances
4.	**Reinforcement of monitoring, evaluation and information systems for control of transboundary pollution, for reduction of nutrients and harmful substances**
4.1	Development of indicators for project monitoring and impact evaluation
4.2	Analysis of sediments in the Iron Gate reservoir and impact assessment of heavy metals and other substances *(to be carried out in the Phase 2)*
4.3	Monitoring and assessment of nutrient removal capacities of riverine wetlands
4.4	Danube Basin study on pollution trading and corresponding economic instruments for nutrient reduction



ANNEX 6 Assessment of Nutrient Emissions and Loads Discharged into the Black Sea

ANNEX 7 Thematic Maps

Annex 7.1 Distribution of Hot Spots in the Danube Sub-river Basins

Annex 7.2 Major Hydraulic Structures and Descriptions in the Danube Basin

ANNEX 8 Summary Reports on National Contributions in Support of the Project Brief

Annex 8.1 Existing and Planned Inter-ministerial Co-ordination Mechanisms Relating to Pollution Control and Nutrient Reduction

Annex 8.2 Existing and Planned Policies and Legislation Relating to Pollution Control and Nutrient Reduction

Annex 8.3 Five Year Nutrient Reduction Action Plan

Annex 8.4 Reinforcement of NGO Activities in Project Implementation and Awareness Raising

Annex 8.5 Development of Process, Stress Reduction and Environmental Status Indicators to Monitor Nutrients Reduction and its Effects in the Danube River Basin and the Black Sea

ANNEX 9 Danube / Black Sea Basin Strategic Partnership

ANNEX 10 Relevance of the GPA for Land-Based Sources of Pollution in the frame of the DRPC

ANNEX 11 Causes and Effects of Eutrophication in the Black Sea

ANNEX 12 Evaluation of the UNDP/GEF Pollution Reduction Programme

Annex 12.1 Terminal Evaluation

Annex 12.2 Terminal Report

ANNEX 13 Endorsement Letters